THE IRON AGE

New York, August 7, 1919

ESTABLISHED 1855

VOL. 104: No. 6

A Dayton Foundry of Progressive Design

Heating and Ventilating, Sand Storage and Material Handling Arrangements are Features of Interest—Freezing of Sand Eliminated

AMONG the features embodied in the new plant of the Advance Foundry Co., Dayton, Ohio, are several which mark a distinct advance from the older types of foundries. These features include an interesting method of distributing air for heat and ventilation; the use of a transferable jib crane and the storage of sand in pits below the foundry floor level. The buildings were designed under the direction of A. H. Kramer, president of the company.

The main foundry building, 104 x 202 ft., is of brick, steel and concrete construction, with an extension at one end which houses the heating plant. The equipment of the latter was installed by the B. F. Sturtevant Co. and consists of a fan that draws air from the outside, the air in winter passing over heating coils, and then being forced through distributing ducts having outlets at each one of the supporting pillars of the building. Thus an even temperature can be had in cold

At the Base of the Supporting Pillars Are the Duct Outlets Which Distribute Air for Ventilating, Heating or Cooling the Building

In this Foundry Brackets or Pintles are Attached to Each Pillar to Support a Jib Crane. The latter is moved to where it may be needed by the overhead traveling crane. The arrangement makes a number of jib cranes unnecessary; also insures unobstructed space for the traveling crane

weather. In hot weather the ventilating apparatus is operated to keep the air in constant circulation and relieve the workmen of oppressive heat, especially when the iron is being poured.

The individual vents can be closed by a butterfly valve at any time desired. During the last winter the system enabled the molders to turn out an appreciably larger amount of work.

In its old foundry the Advance company had considerable difficulty on account of the freezing of molding sand that was stored in bins on the outside. In arranging for the new foundry it was decided to store the sand in pits inside the foundry, and located directly underneath the railroad track that extends through the west end of the building. Removable platforms cover the openings of the pits, so that no space is taken up in the storage of sand except when a car is being unloaded, or when the sand is being transported to different parts of the foundry. As the sand is received in hopper bottom cars, there is but little expense in unloading. A Pawling & Harnischfeger sand conveyor is employed to carry the sand where needed. This arrangement not only has its advantages in preventing the freezing of the sand, but it is estimated that a saving of fully 50 per cent is effected in handling over the former method of storing outside the foundry.

A sidetrack that connects with the Pennsylvania Railroad runs directly into the main foundry building and saves expense in handling materials received by the company, while outgoing shipments can be made with correspondingly low cost. A 10-ton Whiting electric crane serves the main bay of the foundry, and a Curtiss pneumatic traveling crane is also used. As an auxiliary a Whiting portable jib crane is employed. Pintles, or jib crane brackets, are placed on each pillar, and electric connections are provided at each post. Thus the jib crane, with the aid of the overhead traveling crane, can be transferred from post to post from one end of the foundry to the other. The proper connection can be made within less than 5 min. The arrangement not only saves the expense of installing a number of fixed jib cranes to serve different sections of the foundry but also provides more operating space for the overhead traveling crane.

Three Whiting 10-ton cupolas are located in the center of the building, so that the metal has to be transferred only a short distance each way. In the main bay molding pits are provided for heavy work, while most of the light castings are poured in one of the side bays.

A Connersville and a Sturtevant blower, together with a Chicago pneumatic and a Richmond standard air compressor, are in a tightly closed room on a mezzanine floor, adjacent to the cupolas. The core ovens are on the north side of the building, and metal racks for the small cores are used that are moved in and out of the ovens by a Stuebing lift truck.

In the rear of the plant is a fireproof pattern storage building, 40 x 72 ft., two stories high, equipped throughout with a sprinkler system. The building is fitted throughout with shelves arranged so that it will not be necessary to use a stepladder to obtain any of the smaller patterns stored. The buildings were designed under the direction of A. H. Kramer, president of the company. All the cupolas are equipped with electric pyrometers. All raw materials entering the plant are analyzed before being used, and all finished products receive like attention before being shipped out. This analytical and metallurgical work is done by the C. A. Kurz Chemical Laboratories, which are located at Dayton.

Both gray iron and semi-steel castings are produced.

Under the Railroad Track Within the Foundry are Pits for the Storage of Sand, an Especial Advantage in Winter when Frozen Sand Is a Detriment. The flooring over the pits is removable. The sand arrives in hopper cars and, as illustrated, is removed from the pits by bucket

Giant Liners Tentatively Planned

WASHINGTON, July 28—Two gigantic oil-burning passenger vessels with a speed of 30 knots an hour and capable of crossing the Atlantic in less than four days are to be built according to the plans announced by the Shipping Board.

The ships would measure 1000 ft. in length, or 50 ft. more than the Leviathan, and would have a beam of 102 ft. as against 100 ft. on the Leviathan. The gross tonnage would be 55,000. There would be a draft of 35 ft., and a depth of 74 ft. There would be accommodations for 1000 saloon passengers, 800 second cabin and 1200 steerage. The crew would number 1000 officers and men. The vessels would be driven by four propellers upon which will be thrown the strength of 110,000 hp. These oil burners would have a steaming radius of 7000 miles, which means they could cross the Atlantic and come back without replenishing fuel.

Plans for these ships, while still somewhat vague, have reached a stage warranting an official announcement by Chairman E. N. Hurley, of the Shipping Board. Preliminary plans were formulated at a meeting attended by Mr. Hurley, Admiral D. W. Taylor, Chief of the Bureau of Construction of the Navy, with representatives of the New York Shipbuilding Co., the Fore River Shipbuilding Co., the Newport News Shipbuilding & Dry Dock Co., and the Wm. Cramp & Sons Ship & Engine Building Co., and W. F. Gibbs, of New York, chief of construction of the International Mercantile Marine, who drew the plans for the proposed vessels.

A new sales organization known as the Gilmore-Winans Co. has been formed in Detroit to handle the accounts of the Johnson Bronze Co., E-C Co., Chicago, manufacturers of screw machine products; Atlantic Metal Hose Co., New York, and Joy Ball Bearing Co., Chicago. J. F. Gilmore, head of the firm, has only recently disposed of his interests in the Taylor Mfg. Co., and R. E. Winans, the other partner, was in charge of Class B truck production for the Quartermaster Corps during the war.

Definitions for Storeroom Material

Standardizing Definitions and Specifications of Raw Materials, Articles and Supplies—Giving Latitude to Storekeeper

BY H. B. TWYFORD*

FOR every article in every storeroom there is a correct description. This description may consist of only two or three words and figures, or it may require a detailed technical specification to identify properly the material so that no misconception can possibly exist as to what is actually meant. Failure to describe articles properly or to have standard methods of defining them leads to endless confusion in the storerooms and in other departments of a manufacturing establishment. It entails much extra work and expense in referring requisitions back and forth to clear up moot points.

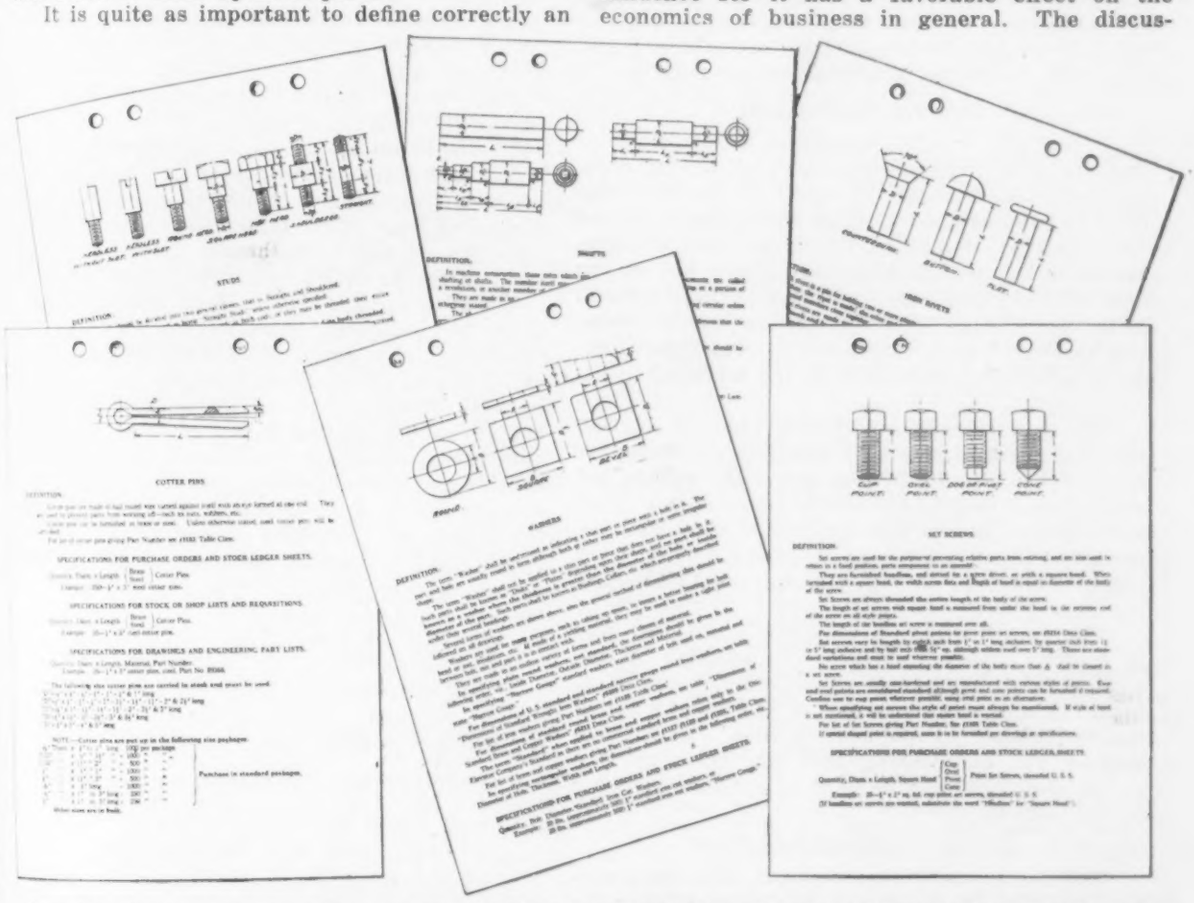
It is quite as important to define correctly an article of small intrinsic value, as it is more valuable ones. Perhaps more so, because the proportionate loss is greater. For example, instances occur in storerooms daily in which an article costing 25 cents or less is incorrectly described, and because of the incorrect description a whole chain of inquiries is opened up to clear up the ambiguous meaning involving an expense far in excess of the value of the article. It is too often the custom to look upon such conditions as a necessary evil which cannot be remedied and also as a part of the daily routine work.

The general practice in manufacturing establishments is for the production department to apply to the stores department for raw material. Should it not be in stock this department applies to the purchasing department to procure it. The stores department therefore stands between the user and supplier and being in this position it is probably affected to a much larger extent by standardization than any other department.

The advantages of standardization are not confined to the particular establishment putting it into force, but it has a much wider and broader influence for it has a favorable effect on the economics of business in general. The discussion on this point will be limited, because it is somewhat outside of storeroom economics, but it is desired to point out what far-reaching influence loose storeroom methods may have.

If a storekeeper draws up a requisition for materials or supplies and uses incorrect or inadequate descriptions, it is more than probable that these will be repeated by the purchasing agent in sending out his inquiries and orders to those concerns with whom he is doing business. The result of this is that they will come back with requests for information of a more exact and definite nature.

If reports were obtained from business houses,


STUDS
COTTER PINS
SPECIFICATIONS FOR PURCHASE ORDERS AND STOCK LEDGER SHEETS.
SPECIFICATIONS FOR STOCK OR SHOP LISTS AND REQUISITIONS.
SPECIFICATIONS FOR DRAWINGS AND ENGINEERING PART LISTS.
Purchase in standard packages.
SHAFTS
HINGES
SPECIFICATIONS FOR PURCHASE ORDERS AND STOCK LEDGER SHEETS.
HEX NUTS
SET SCREWS
SPECIFICATIONS FOR PURCHASE ORDERS AND STOCK LEDGER SHEETS.

These Reproductions of Sheets Indicate the Method Adopted for Standardizing Material and Small Articles Used Throughout a Manufacturing Establishment. They are placed in binders and distributed to all members of the organizations required to name or specify material, articles or supplies

*Nichols Copper Co., Laurel Hill, Long Island, N. Y.

an overwhelming majority would testify that their expenses are largely increased because of the conditions referred to. A vast amount of the time of salesmen and clerks is taken up investigating the inquiries and orders they receive in an endeavor to discover exactly what is required. This means many unnecessary telephone calls, much correspondence which could be avoided and a great deal of salesmen's time wasted. The additional expense caused by these factors must be added to the cost of the goods and must ultimately be covered by the selling price, therefore, the buyer must eventually pay them. The storekeeper has a large part to perform in reducing these expenses and in accomplishing this he will reduce the cost of the goods under his charge.

To specify, means to describe accurately; to be definite; to be explicit. With many small articles in common use this accuracy can be expressed in the commercial terms in general use in the trade, but there are certain materials which need greater particularization and must be described in highly technical terms and probably some tests must be specified which the material is to undergo. This distinction segregates roughly all articles and materials into two classes, and they will, therefore, be discussed separately.

Technical Specifications

Under this heading are those descriptions of material which the engineering staff should draw up and which become the standard specifications for the raw material used in the factory. These specifications should be furnished to the storekeeper and purchasing agent. It may not be the duty of the storekeeper to see that the material under his charge conforms to the specifications, but he should have copies and inform himself regarding the characteristics of the material in his storeroom.

The specifications may provide for certain physical tests or chemical analysis. If these are not carried out before the material reaches the storeroom, it may be the storekeeper's duty to have them made. In any case he should know that the designated tests have been made and a copy of the inspection report should be furnished to him and a notation made on his records of the results.

The specifications themselves should be kept in folders properly indexed. In addition to this a numerical list of all specifications should be kept. This enables any one of them to be found quickly, either by number or title. With some articles the engineering staff may furnish blue prints and these can be kept in a manner similar to the specifications.

Correct Commercial Definitions

The correct definition does not only mean getting the right name, it also means specifying the quantity, size and weight correctly. In those establishments where standard definitions are not enforced, it is a common occurrence to find one man name the length first and the width next, while another will reverse this. Again one man will give the name of the article first followed by quantity, size, or weight, while another will give the quantity or weight before naming the article. The variations are so many and lead to so much confusion in some establishments that it has been found imperative to compel the use of proper definitions.

The storeroom is probably more interested in this matter than any other department, because it is the medium through which the materials and articles are distributed, and because it has to use the definitions more frequently than other departments. The storeroom employees come into physical contact with the goods, whereas to the cost department and purchasing department employees the mention of them carries no more meaning than just a name. The storeroom usually draws more requisitions than any other section of an organization, and as already pointed out it is necessary for these requisitions to be written up correctly.

Very little has been done toward standardizing the use of proper definitions. In Fig. 1 are given several illustrations of sheets of definitions which have been proved very successful and of great benefit in securing the objects outlined. In all establishments of sufficient magnitude some similar scheme should be in force. There are certain points in connection with the illustrations which need some explanation although their general import can be readily comprehended by a careful perusal.

They indicate the method of defining well known small articles, and how these should be specified on the storeroom perpetual inventory or ledger sheets, which should in all cases correspond with the specification on the storeroom requisitions and on the purchasing agent's orders. It will be noticed that when specified on drawings and engineering part lists the "part number" should be given. This is a detail which it is not necessary to specify on a purchase order, because it would have no meaning to the recipient of the order. It is information solely for the members of the organization and enables them to identify the article with the part number.

Standardizing definitions in this manner enables non-technical employees to acquaint themselves with the characteristics of the material and articles used throughout the establishment and in this respect they are a liberal education. They should be distributed to all members of an organization whose duties require them to name or specify any material, and should be kept in handy binders for ready reference. The purpose which the sheets are intended to serve will, however, be defeated if they are not used. This is the one defect of this system. They are likely to be treated as books of reference for use when in doubt, and sometimes when in doubt or in a hurry a man will not refer to them at all, with the result that mistakes are made. In spite of this they are eminently successful and a rigid enforcement of their use would make them completely so.

The Storeroom in Standardizing Definitions

There are many organizations which are not of sufficient magnitude to adopt an elaborate scheme and, perhaps, do not care to incur the expense which it entails. Nevertheless, their need is just as insistent as that of the larger concerns. It is in such instances as this that the storeroom can render inestimable service. It can do it to better effect than any other department, because it is the medium through which the articles pass and it has both the acquaintance with the physical properties of the article by daily contact, and the acquaintance with its description through the daily clerical work of recording and stores bookkeeping. Large results can be accomplished by the storeroom if the problem is approached in the right manner and grappled with in a systematic way.

It is not contended that the storekeeper should define what material should be used in production work. What it is suggested the storekeeper's

activities should cover is the proper description and ordination of the innumerable small articles which form a composite part of the product of the factory.

Giving Latitude to Storekeeper

In many establishments it may be wise to let the storekeeper have the deciding voice in selecting such things as waste, brooms, brushes, all kinds of packing materials, etc. If he is a man of the right caliber with common sense and discrimination he can keep the varieties of these used around the plant at the minimum.

The storekeeper is often the man who is best fitted to control supplies which are for expense account, because he has generally the ability to judge the utility of an article and this is of the first importance. In some manufacturing plants large sums are expended annually for this class of overhead expense, and often considerable duplication exists which could be avoided by placing the control of them entirely in the hands of one man. Being in an independent position, serving all departments with equal fairness, the storekeeper is in a position to weigh all points connected with furnishing supplies with good judgment and to give decisions without prejudice.

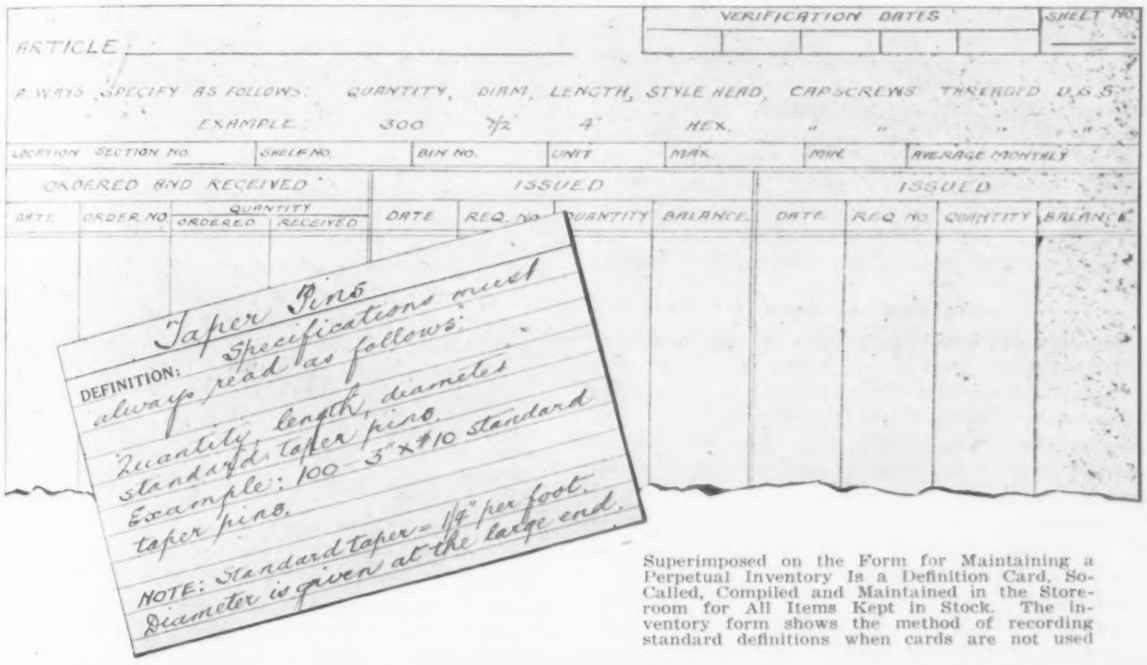
Requisitions made on the storeroom for supplies for expense account should be on a different form from that used for raw materials and articles for production work, and before issuing the supplies the requisitions should be submitted to the storekeeper for approval. The department needing the supplies should be specified and whenever possible the exact purpose for which they are required. The closer these lines can be drawn the greater will be the saving in this class of expense.

Method of Using Proper Definitions

There is an extensive movement among manufacturers of many products to standardize the specifications of their output. When the correct definition has been obtained a permanent record should be made of it in the manner indicated in Fig. 2. By adopting this course the whole range of articles in the storeroom can be covered within a reasonable time and without disturbance of the routine work. If it is found necessary, in very large storerooms, a man can be designated to standardize definitions and devote his whole time to it until completed.

If separate cards are not kept on which the definitions can be recorded they can be specified on the perpetual inventory cards or sheets, as shown in Fig. 3. Constant visualization of these definitions in their proper form ultimately compels the use of them. There is one great advantage in this scheme in that the definition is always in view of the person writing up a requisition for additional material and renders it almost impossible to use incorrect descriptions.

The preceding discussion covers some of the main features of a storekeeper's activities through which he can render signal and valuable service. It is not an easy matter to get all foremen to specify correctly each article when they make requisitions to draw material from the stores. Very considerable improvement could be effected over the conditions existing in many plants. Even if requisitions come into the stores with incorrect or inadequate definitions, the stores department should not repeat these delinquencies in writing up the requisitions which go to the purchasing department.


VERIFICATION DATES
SHEET NO.
ARTICLE
ALWAYS SPECIFY AS FOLLOWS: QUANTITY, DIAM., LENGTH, STYLE HEAD, CAPSCREWS THREADED U.S.S.
EXAMPLE: 300 7/2 4" HEX. " " " "
LOCATION SECTION NO. SHELF NO. BIN NO. UNIT MAX. MIN. AVERAGE MONTHLY
ORDERED AND RECEIVED
ISSUED
ISSUED
DATE ORDER NO QUANTITY ORDERED RECEIVED
DATE REQ. NO QUANTITY BALANCE
DATE REQ NO QUANTITY BALANCE
DEFINITION: Taper Pins
Specifications must always read as follows:
Quantity, length, diameter
Standard taper pins.
Example: 100 3"×#10 Standard taper pins.
NOTE: Standard taper = 1/4" per foot.
Diameter is given at the large end.

Superimposed on the Form for Maintaining a Perpetual Inventory Is a Definition Card, So-Called, Compiled and Maintained in the Storeroom for All Items Kept in Stock. The inventory form shows the method of recording standard definitions when cards are not used

---

"Cambria Steel," 1919 edition, a handbook of information relating to the structural steel manufactured by the Cambria Steel Co., Philadelphia, is an illustrated volume of 603 pages, 4½ x 7 in., bound in leather. It revises to a considerable extent the information contained in a previous edition, and gives much new matter. Attention is given to a wider range of structural products, and tables, rules, data and formulae have been extended and newly incorporated. The book, which was prepared and compiled by George E. Thackray, C.E., special engineer of the Cambria Steel Co., is of unusual value to engineers, builders, architects and mechanics because of its comprehensiveness.

Statistics compiled by the Shipping Board show that 21 vessels aggregating 91,000 deadweight or 6,667 gross tons were delivered during the week ending July 18. The total of all vessels delivered up to that date is 1111 of a total deadweight tonnage of 6,136,339. The ships delivered during the week included 14 contract steel, one requisitioned steel and six composite.

Limiting of Transverse Rail Fissures

Effect of Non-Diffusion of Elements—Several Causes for Fissures—Bad Influences of Quantity Production—Higher Intelligence Needed

BY PAUL KREUZPOINTNER

MUCH has been said and written on the origin of transverse fissures in rails, but G. F. Comstock's discussion in THE IRON AGE of March 6, viewing the phenomenon from a different angle, suggests a partial remedy for the prevention of these fissures. The belief is expressed that the unequal distribution of the metalloids in the steel, especially the phosphorus, and the condition in which the phosphorus is found, are the primary cause of the formation of fissures. The conclusion is drawn that the formation of the fissures would be greatly diminished by means of a more uniform diffusion of the metalloids through the metal, thus causing their absorption with the iron as a solvent, this diffusion to be promoted by reheating or prolonged heating of the steel. That such a procedure would have a decidedly beneficial effect in reducing the breaking of rails due to internal fissures there is considerable evidence.

Diffusion of Elements

Many years ago, during the trying period of transition from iron to steel, the discovery was made that the quality of steel could be materially improved by careful heating and reheating. The knowledge was revealed that at certain stages of heat the carbon and other elements were diffused through the metal, thus producing that uniformity of structure which aids in the rapid dispersion of the vibrations produced by the stresses to which structural steel is subjected to in service. It was found that the metalloids were diffused to the degree that time and heat favored the process. During the early stages of steel making many failures of structural steel occurred in everyday mill work. In one case the writer created ill feeling by criticizing the manner of heating forgings. The resentment was so intense as to compel the writer to demand the appointment of a committee of experts to judge the reasons given for the heating being faulty. There was no more trouble after changing the method.

In another mill of high standing the quality of output began to decline slowly. The writer suggested that the heater was on the wrong track. This was stoutly resented. On investigation, however, the writer's suspicion was confirmed. A foreign manufacturer came to the writer with a tale of woe about losing a whole heat sometimes in rolling. Result of investigation—poor heating. A case of bad flanging steel was another case. The steel was badly segregated but the lot was saved by reheating which resulted in uniform diffusion of the metalloids. About the same time it was whispered that the good quality of Krupp steel was due to some occult knowledge beyond the reach of ordinary practice. The mystery proved nothing else than the result of careful heating and annealing.

It was the possession of this knowledge which made Dr. Kircaldy, the noted English metallurgist, say to an American engineer: "Give me glue and sawdust and I will make good steel out of it." While only a figure of speech the remark indicated what could be done by careful treatment of steel.

The Desirable Equilibrium in Steel

The ideal condition of steel is a solid solution in equilibrium, attainable by maximum uniform diffusion of chemical elements through the mass. In a solidified solution this ideal condition is not attainable in the ingot on account of slag inclosure and segregation. The presence of the former can be minimized by care; the latter can be rectified by diffusion, the degree of such diffusion depending on the element of time and degree of heat, the object being maximum uniformity and fineness of grain with consequent relief of residual stresses which, in turn, result in an equilibrium of forces resisting successfully the extraneous forces of destruction. On the other hand recovery from overstrain is made possible by this equilibrium of resisting forces with consequent prevention of fatigue and fracture. Mysterious fractures are indicative of the absence of this desirable equilibrium in every cross-section in the structure to take part in resisting destructive forces.

To the absence of this uniformity, and of homogenity, internal fissures are due which, reduced to a simple term, are detail fractures from the inside out. Slag and phosphorus veins act like wedges driven between the crystals of the steel when the structure is subjected to alternate tension and compression. The results of this condition are aggravated if the cross section of the structure is not uniform, as in a rail, where several factors combine to make slag inclosures and segregation more objectionable because of inequality of grain size due to inequality in reduction of cross-section. Thus the deteriorating factors are: Slag inclosures; nests of phosphorus in varying combinations; disproportionate diffusion of the metalloids at a given degree of heat, the ratio of diffusion of phosphorus to carbon for instance being seven to one, that is, phosphorus diffuses seven times slower than carbon; increase of destructiveness by irregularities in the rail head owing to larger grain size; unavoidable difference in grain size in different cross-sections of the rail resulting in impairment of rapidity of dispersion of vibratary motions and flow of metal produced by rolling load.

Fissures Caused by Several Factors

On analysis the conclusion suggests itself that the formation of internal fissures is the result of a combination of contributing factors, rather than of one factor and that the deteriorating influences of these injurious factors can be largely modified by judicious heat treatment.

Demand for rapidity of mass production has thus far interfered with the patient study and application of remedies to eliminate the internal irregularities of structural steel of all kinds. The starting of breaks in structural material, beginning on the inside, was an impressive revelation in the investigation of hundreds of breakages by

the writer from the beginning of the tentative application of steel for structural purposes to its modern mass application for all purposes. These inward fractures diminished to the degree as the understanding became more general that inequality in the diffusion of the chemical elements, variations in heating and cooling, differences in penetration of pressure while working the steel producing differences in grain size, were productive of unstable equilibrium with consequently impaired power of resistence. Just as a lamination in telegraph wire obstructs the free flow of electricity or laminations in boiler plate prevent the rapid conduction of the heat from the fireside to the waterside thus overheating the plate, just so a slag vein or undiffused phosphoric vein interrupts the free passage of the vibratory motion and flow of steel through the head of the rail. The metal on the underside of the vein reacts sluggishly while the vibrations travel along the vein to find an outlet at its end at which point the metal is fatigued repeatedly until detail fracture takes place if the steel was in good condition otherwise, or sudden fracture takes place along existing irregular cleavage lines between coarse crystals where cohesion is weak.

The destructive effects of crowding the vibratary motion and flow in the steel, set up by shocks or rolling loads, into a contracted space with consequent fatigue at that space in the structure was exemplified by the investigation of the American Institute of Mechanical Engineers in the early 90's, on the causes of the breaking of ore stamps at the fillet or at the weld of the stem. The vibrations originating in the big shoe of the stamp being prevented from continuing freely into the stem by the contracted passage at the fillet where the stem joined the shoe, the metal at that point became easily fatigued and the stem broke at that point.

Deductions from the Foregoing Analysis

A study of these various phases quite clearly indicate how a combination of factors may produce internal fissures. There is the wedgelike intrusion of slag or phosphoric veins for shorter or longer distances; irregularity of stucture, segregated spots and other causes leaving a more or less unstable solid solution to do heavy work. At the end of a vein a small cross-section has to do a maximum amount of work in rapid succession most of the time and frequent fatigue with inability to recover on account of lack of time or irregularity of structure.

Illuminating examples of the results of this combination of deteriorating forces are afforded by Robert Job's paper entitled, "Types of Rail Failures and Some Method for Their Detection," delivered at the Sixth Congress of the International Association for Testing Materials. Proceedings, First Section, Section A. (Metals) Page 78. Fig. 12 in that paper is a fine sample of a detailed fracture from the inside with a disturbing vein in an otherwise well conditioned ingot, the steel evidently being conditioned to recover after slight overstrain.

In order to explain the final fracture downward it may be remembered that there is a difference in density of structure between the head and the web. This difference is apparent in the illustration, causing the formation of a neutral zone of metal at the junction of the head of the rail and the web, this zone receiving the overflow of vibratory motion and is thereby affected in a similar manner as the fillet end of the stem of an ore stamp where it enters the broader shoe of the stamp. Any one who has had frequent opportunity to observe the meanderings of the beginnings of fatigue or detailed fractures will recognize the point of the beginning and path of the fracture in the illustration referred to, and the conditions of the steel leading up to the fracture. The other illustrations of Mr. Job are simply variations and aggravations of this condition.

Modifying Remedies

The study of the causes of internal fissures is made difficult by the complexity of interrelated forces and factors which combine to produce the undesirable results. While increasing wheel load has been charged as a cause of frequent rail breakages, this is only a secondary cause. If rapid methods of mass production could be improved the steel would carry an increased wheel load for a long time without the breaking of rails in the way they do. Rails would wear out more quickly under these circumstances but not necessarily break. It is remarkable what an amount of punishment a high class steel structure will take before it breaks down, although this is a quality not easily demonstrable by artificial means. But the art of steel production has attained to such a high standard and has at its command auxiliary agencies of such high order that ways might be found to master the difficulties of the situation.

Present day rapidity of production is responsible for much of the trouble and it would be interesting to have, on the one hand, a reliable estimate of the losses due to wrecks, delays, repairs, extra wear and tear of machinery, compensation and non-calculable incidentals, and on the other hand increase in cost of production due to a somewhat slower speed in production. There is hardly any doubt that loss in transportation would show a considerable larger total than increase in cost of production. Unfortunately the loss on one side is scattered, irregular, intangible, hence difficult to determine, while on the other hand a slight decrease in production presents no difficulty in calculating the amount of cost.

A More Intelligent Mill Force

One means of improvement would be the raising of the standard of general intelligence of the mill force sufficiently for them to understand, or at least grasp, the import of questions like the one under discussion, if presented to the force in a simple manner. In the last analysis no superlative refinement of any single department in a mill will bring the desired results unless the working force is intelligent enough to understand where their interest comes in in the efforts of the management to meet the requirements of the trade and, not least, the general welfare and prosperity of the whole industry, of transportation and of the country at large.

But this general intelligence cannot be attained by a narrow manual dexterity training but it must be attained by a persistent development of the reasoning faculties, by a training in elementary business principles, by cultivating a sense of moral obligation for one's work and how it contributes to make one's job permanent as well as contribute to community welfare. This does not mean for the millmen to become chemists and scientists, but it does mean the acquisition of an elementary understanding of the economic condition of the country and an inkling of the forces

which shape this economic condition, upon which their jobs and wellbeing depend at present and in the future. They ought to understand the extent, nature and possible duration of the resources which supply their industry with raw materials and how their prosperity, the prosperity of their industry, of transportation, of the much mentioned American standard of living is intimately tied up with the economic use of these raw materials and all other resources of the United States.

This is not too much to ask of a highly intelligent people with dormant talents and mental faculties as a most valuable national asset lying idle and undeveloped. With increase of density of population, decrease of resources in quality or quantity or both, and the economic pressure occasioned by the strife between nations and races, such an intelligence training has become a patriotic duty as a matter of self-preservation. And the possible prevention, or at least the material reduction, of the loss and waste, uncertainty and anxiety, caused by internal fissures of rails, should be one of the objects of this general intelligence, because of the nation-wide beneficial influences upon the social, industrial and civic life of the whole people by the developing and broadening of the mental horizon of the industrial workers not only in mills but in shop, store and office.

German Appropriation of French Machinery

Rolling Mill and Other Equipment Dismantled in Northern France Carried to Germany and there Re-assembled

THE accompanying illustrations are supplementary to those which appeared in THE IRON AGE July 10 in connection with an article based on data obtained from Major L. Descroix, consulting engineer attached to the headquarters staff of the French army during the war, setting forth the Vandal practices on iron and steel works in Northern France. As was then stated not all was destroyed, although many plants in their entirety were ruined or razed, for the Germans appropriated considerable equipment for which they had use and transported it to Germany. In some instances the machinery was of German origin and the work of dismantling was carried on with the aid of the original blueprints, presumably supplied to the German military forces by the German builders.

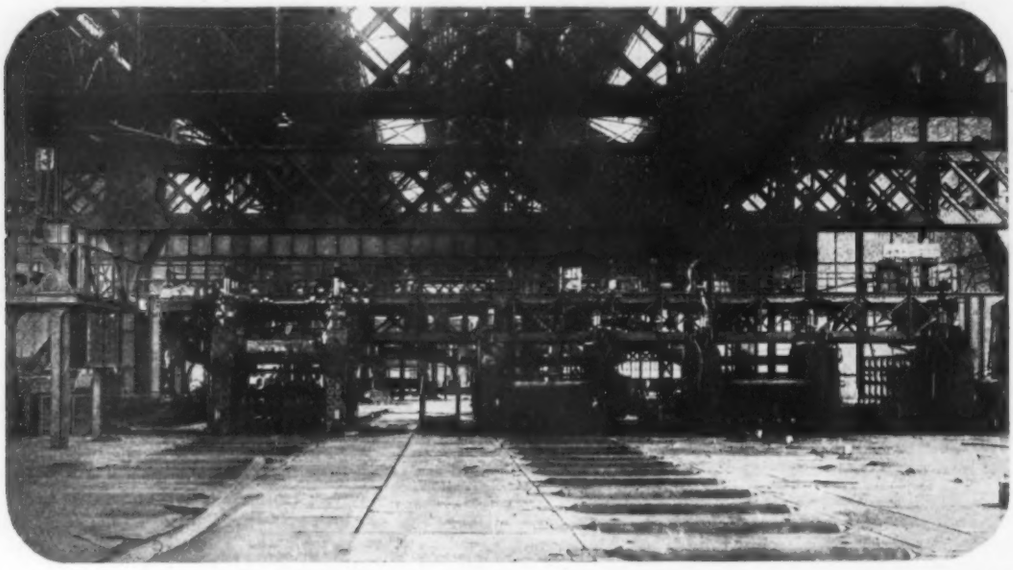


Fig. 1—The Rolling Mills of the Forges & Steel Works of the North and East, France, Photographed in November, 1916

Fig. 1 shows the rolling mills of the Forges and Steel Works of the North and East, Valenciennes, as they existed in November, 1916. The Germans were in possession at that time, and the photograph was secured by methods which need not be detailed. At that date the buildings and the plant were practically intact. In the picture can be seen a 34-in. reversing mill. Between the first and the second mill can be seen the blooming mill.

Fig. 2 is the same site as it existed immediately after the armistice, and as it was photographed on Jan. 26, 1919. The same rolling mill can be seen in the background, the frame of the second mill with its train of gears is still standing, but everything is useless and all the foundations have been dynamited by the Germans before they retired. Before any reconstruction work can begin a tremendous amount of labor must be expended on clearing away the wreckage. As to the metal work of the building nothing remains but a few girders which could not be taken away for lack of freight cars to carry them.

Fig. 3 is a photograph taken at Steinfort, Luxemburg, March 15, 1919. It shows the same girders, the same rolls, and many of the same machines as appear in Fig. 1. The German authorities considered this plant would be useful to them and gave orders for it to be removed to Luxemburg, where they imagined it would remain after the war. Marshal Foch, however, interfered, and the Germans found themselves obliged to abandon their booty before the advance of the Allied troops.

The Arbel Co., having a forge shop, open hearth steel plant, foundries, rolling mills and mechanical shops at Douai, had a high reputation in Europe for a special large capacity railroad car with automatic discharge for coal and iron ore. Among the German engineers who visited this plant, and were entrusted with the task of industrial destruction in the Valenciennes district, it is related by Major Descroix, Herr Karlier, a partner in the firm of Van der Zippen, car manufacturer at Kalk, near Cologne, and also his brother-in-law, a captain in the German army.

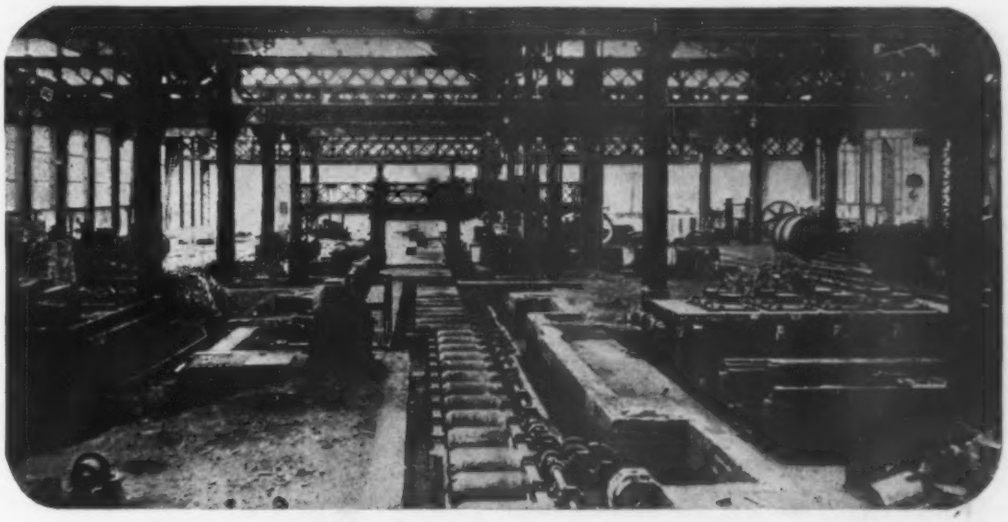
These two men had an interview with M. Falchi,

the chief engineer of the Arbel Co. Pointing to the 1200-ton press, 72 ft. in length, which was used for stamping the sides of these cars, they said:

"With this machine you took away from us an order for 100 tank cars for the Rumanian oil companies. Now we are going to remove the press to our own factory, and we shall make Arbel cars in your place." The next day a gang of Russian prisoners arrived at the Arbel factory and began taking down the press, which was sent into Germany.

Fig. 2—The Rolling Mills Shown in Fig. 1, as They Appeared Jan. 26, 1919. During 1917 most of the machinery was taken away and the metal work of buildings pulled down. The foundations were dynamited when the German army retired

Fig. 3—The same rolling mills under reconstruction in the new steel works at Steinfort, Luxemburg. The machines and all the structural steel were brought from Valenciennes and Maubeuge and re-erected according to the original French plans



Conditions of German Iron and Steel Industry

WASHINGTON, Aug. 5—The Bureau of Commerce has published a report submitted by Arthur H. Redfield, trade commissioner, The Hague, Netherlands, outlining the situation in the German iron industry. This paper reports:

"A number of concerns are still closed for lack of coal. The dearth of raw materials is also felt in many places. The total production of all factories is now only a little more than 30 per cent of the peacetime output, and it is scarcely believed that there will be any perceptible change for a considerable period. Yet the large iron and steel mills, as well as the machine shops and related industries, could still give employment to hundreds of workmen, if the workmen manifested any desire to work. If the Government does not institute regulations in favor of compulsory work, the manufacturers say, the situation of the German iron industry must become decidedly critical.

"Export trade especially has had to suffer under this state of affairs. Already extensive inquiries have been received from the neutral, and even the hitherto hostile countries. In Italy, especially, there appears to exist a desire for entering once more into closer relations with the German iron industry as quickly as possible. But a great deal of important business has been lost for the German iron market through impossibility of delivering quickly.

"In prices also the German industry falls behind the American competition. American beams and bar iron are offered at 180 to 190 florins ($72.36 to $76.38) c.i.f. Rotterdam, while the German price is 500 florins ($201).

Question of Ore Costs

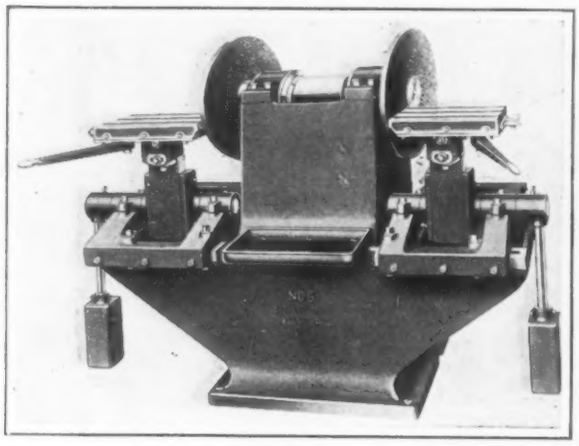
"It must be admitted that the French owners of ore will deliver ore to Germany at prices which indicate an important increase over the cost prices. The prices of Swedish, Spanish and other ores also, with the unfavorable state of exchange, will weigh heavily upon the cost of production. Germany is afraid of a strong invasion of the united Franco-Luxemburg-Belgian iron and steel mills.

"The derangement in production and the impossibility of shipping iron from the occupied territory to the right bank of the Rhine have delayed the factories very much with their deliveries. Many orders received in January have not yet been shipped, and long terms of delivery are extended four to five months for even ordinary commercial qualities. Many factories have received orders which will keep them busy until the first part of 1920. Under the influence of the lack of raw materials, prices have risen in the last weeks, in many cases several hundred marks above the official standards.

Disk Grinder with Lever Feed

The single spindle disk grinder illustrated is manufactured by the Badger Tool Co., Beloit, Wis. The features emphasized are the level feed work table, ball bearing spindle mounting and the rockershaft construction.

The lever feed table possesses a number of refinements such as an adjustably attached wheel truing device, a back stop and micrometer screw stop. Leverage for heavy cuts is provided through a toggle joint



A Lever Feed Work Table Is Provided for This Disk Grinder

designed to increase the pressure as the table approaches the grinding disk; thus the cut is started with light pressure and the leverage is increased after the sharp points have been removed from the piece being ground thereby to preserve the life of the grinding disk.

The ball bearing mounting is designed to eliminate trouble caused by dust or grit and provision is made for draining off the lubricant and for cleaning the housings. The rockershaft is mounted in a saddle so that it has a rigid bearing support on each side of the box which supports the lever feed work table. It is pointed out that this added rigidity not only makes it practicable to do accurate grinding, but because of the absence of vibration, makes the abrasive disks wear longer.

These machines are built under patents granted to Edward B. Gardner, president of the Badger Tool Co.

Export Company Opens General Offices

ST. LOUIS, Aug. 4.—The general offices of the Mississippi Valley Trading Co. recently organized with a capitalization of $5,000,000 under the Webb-Pomerene act, have been opened at St. Louis. The company will do an export and import business throughout the Mississippi Valley. F. Ernest Cramer is president and Charles F. Sharp, general manager.

Mr. Cramer resigned his position as president of the Central Dry Plate Co. and also severed his connection with the Cramer Dry Plate Co., St. Louis, to devote all his time to the new corporation. He is chairman of the Foreign Trade Bureau of the St. Louis Chamber of Commerce.

The enterprise, which will mean much for the development of the iron, steel, and allied trades between St. Louis and Mississippi Valley cities and foreign centers, has received assurances from the United States Shipping Board with reference to its application to lease 20 ships of about 8000 tons deadweight, each to be used in the European, Latin-American and Oriental trade via the port of New Orleans. Pending the release of these ships Mr. Cramer said the company's business would be handled via New Orleans and Mobile by steamship companies now in operation.

Outlining the purposes of the company, Mr. Cramer said: "It is our intention to develop the trade and commerce of the Mississippi Valley. We will handle our shipments via the Federal Barge Line on the Mississippi River and will work via New Orleans and Mobile. There are 22 states in the Mississippi Valley and more than 90 per cent of the foreign trade and commerce goes through the port of New York. We intend to boost export business in St. Louis and in the entire Mississippi Valley. We will send a representative to Mobile and New Orleans in the immediate future to complete arrangements for the handling of freight through these ports."

Mr. Sharp, manager of the company, has been engaged in the export business in St. Louis for more than 25 years. He has spent considerable time traveling in Latin-American countries and in 1914 was a member of the delegation appointed by the Business Men's Bureau of St. Louis which visited South America.

The other officers of the corporation are: Frank C. Rand, first vice-president; James F. O'Neil, second vice-president; J. H. Conrades, third vice-president; T. W. Van Schoiack, secretary; James A. Troy, assistant secretary; N. A. McMillan, treasurer, and Joseph W. Folk, general counsel.

Mr. Van Schoiack will depart soon for a trip to South America and Europe to do field work in behalf of the organization.

Drill for Hexagonal and Square Holes

A drill for making hexagonal or square holes and for counter-sinking bolt heads has recently been brought out by the Detroit Hexagon Drill Co., Detroit. This drill fits any standard drill press, hand drilling machine or lathe, and a special head or chuck is not required. It works like an ordinary twist drill, fitting in any ordinary chuck on a drill press, and it is claimed will drill holes as accurately and at about the same speed as a twist drill will drill a round hole.

A guide plate, which is a small piece of tool steel with a hexagonal or square hole through the center the size of the hole to be drilled, is clamped to the work with the hole over the spot to be drilled. This guide plate acts similarly to a bushing in guiding the drill. The drill is then let down through the hole in the guide plate and the hole drilled. It is claimed that it will cut a clean, accurate, straight edge hole with one operation.

Hexagonal holes can be made by This Drill When Used with a Guide Plate and in an Ordinary Drill Chuck

In counter-sinking for bolt heads a hexagonal hole is first drilled to a depth of the bolt head; a bushing, which is supplied with the drill, is inserted in the hexagonal hole in the guide plate to insure perfect centering of the hexagonal hole; a round twist drill of the proper size is inserted in the chuck in place of the hexagonal drill, and is let down through the round hole in the bushing. It is stated that with this drill holes with perfect flat bottoms or box ends can be drilled in one operation. The drills are made of high-speed steel and are run at a speed up to 600 r.p.m., depending on the size of the drill and the kind of material to be bored. The drill is designed for drilling material from wood to steel.

The submerging of a stripped steel ingot as quickly as possible completely beneath the surface of an aqueous bath before its interior has set solid and keeping it there long enough to prevent it from recalescing at its surface when removed from the bath, is covered by a patent (U. S. 1,304,948—May 27, 1919) granted to Charles Dear, London, England. It is claimed that the general effect of this process is to enhance the toughness of the steel and its ductility and that it is applicable with advantageous results to alloy steels, particularly nickel.

Welding Wrought Iron and Steel

Accessory Material and Equipment Found Useful—Preparation of the Weld—Data on Carbon and Metallic Electrodes

BY H. L. UNLAND*

THE welding of wrought iron and steel in simple sections by the electric arc welding process presents no serious difficulties. Reasonable care on the part of the operator in keeping the weld clean and in the preparation of the weld will, with ordinary skill, result in a successful weld.

In addition to the usual equipment and auxiliary apparatus, special jobs render it desirable to have on hand other miscellaneous pieces of equipment. Odd pieces of carbon block or of copper are of much assistance as dams in holding the molten metal in place. In cases where the weld must be smooth on one side, a piece of copper or carbon is held against the weld and metal filled against it. Iron or steel can be used if care is taken not to weld to it. In filling a hole the bottom is often closed by holding a plate of carbon or copper against it until sufficient metal is filled in to hold.

Care should be taken to flow the molten metal against the guide pieces and not to allow the arc to play directly on them. Otherwise the weld will probably be contaminated by this material, or else the guide piece may be welded solid and cannot be easily removed. A steel wire scratch brush is used to remove light scale and rust, before commencing to weld if necessary, and also at intervals during the welding, usually when changing electrodes.

For small work the positive lead may be bolted to an iron plate forming the top of a work bench. The work may be set on this bench, the contact being sufficient to carry the current. In many cases a vise mounted on the table will be found desirable. If the work is too large for the table it may be set beside the table and a bar laid across to it. This will provide sufficient current-carrying capacity, provided scale and rust do not entirely prevent contact. The rails in a round house if bonded are usually connected to the positive lead and any car on these tracks may be welded by running only the cable leading to the electrode, the return cable being unnecessary since the current will be carried back through the rails.

A convenient terminal for the positive cable consists of a copper hook of proper size to which the cable is bolted. The terminal may be laid on the work or hooked on a projecting part. It is seldom necessary to actually clamp the return lead to the work unless the metal is thickly covered with scale or dirt which acts as insulation, in which case it is easier to chip or brush off a clean place for the contact than to use a clamp.

Protection from Light Rays

If welding is to be done in a room where other employees are doing other work, screens should be provided around the welding operator. They should be high enough to prevent the light striking a large part of the ceiling since the flicker of this light would probably affect the other workmen. The effect, while probably not injurious, would be irritating. White walls and ceiling should be avoided in a welding room.

Gas burners for preheating and fire brick, sand, or sheet asbestos for covering are useful, especially for cast-iron work, which in many cases should be preheated uniformly to a red heat and welded while at this temperature. A receptacle of water is desirable, in which the electrode holder can be cooled when it becomes too hot after continued use.

Some operators feel that gloves are necessary to protect the hands from the arc. In many cases, however, operators find gloves to be in the way, especially when working with the metallic electrode. If desired, however, any leather or cloth glove will give sufficient protection to the skin of the hands, which is much less sensitive than the skin on other parts of the body. The arms, neck, and face should, however, be covered, since exposure of these parts will probably result in burns similar to sunburn, which while painful are not serious.

It is the experience of a great majority of welders that flux of any kind is unnecessary in welding, and further that it is a source of danger in that there is liability of contaminating the weld. If the work is kept clean by brushing at frequent intervals and ordinary care is taken in the operation of the arc a good weld can be made without flux and if these attentions are lacking, flux will not make a good weld.

Preparation of Weld

Metal that is clean is much more likely to make a good, strong weld. Scale, rust, grease, soot and foreign matter will contaminate the weld and such inclusions necessarily weaken it or else make it hard. Impurities may also make the metal porous and spongy, due to liberation of gas. Pieces of foreign matter may prevent the molten metal filling all parts of the weld and cause cavities.

Various methods for cleaning are in use—pickling for small parts, washing with gasolene or lye, boiling with lye, sand blasting, chiseling, scratch brushing, etc., the method depending on the local conditions.

In welding heavy sections where it is necessary to deposit several layers of metal, the surface of the preceding layer should always be cleaned before starting the next.

When sections of ⅛ in. or less in thickness are to be joined, the edges need not be beveled, but they should be separated a small amount. Thicker sections should have the edges beveled to give a total angle of 60 deg. as well as separated by ⅛ in. In some special cases angles as low as 30 deg. may be necessary and as high as 90 deg. may be used, but an average safe value is 60 deg. Still heavier sections may be beveled from both sides and the weld made from both sides. In the latter case a layer should be put on one side and then a layer on the other to prevent warping.

For long seams the edges should be ⅛ in. apart at the end where the weld is started, and at the far end the space should be ⅛ in. plus 1½ per cent of the length. This takes care of the expansion of the metal in the sheet and also of the contraction of the metal in the weld as it cools.

Another method of reducing expansion is to put in short sections at intervals, welding in one layer at a time, starting at the center and working alternately toward either end. Then put one layer in the open sections, and continue in the same way till the weld is completed. The welded section of any layer should not match those in the layer below or above, the joints being broken as in laying brick work.

The welding of complicated shapes such as fly wheels and some castings may require preheating at certain points to produce initial expansion which will be overcome as the weld cools. In some cases, the entire piece must be preheated and in some cases after welding the whole piece must be annealed. This is sometimes done by heating the piece uniformly and then covering it with sand-asbestos, etc., and allowing it to cool slowly.

In welding cracks in plates, forgings, or castings the crack should be chiseled out to get a good bevel,

*Power and Mining Department, General Electric Co.

entirely through the plate with ⅛ to 3/16-in. clear opening on the back or to the bottom of the crack in castings or forgings. In boiler work ½-in. holes are sometimes drilled well beyond the ends of the crack and the crack chiseled, beveled, and welded.

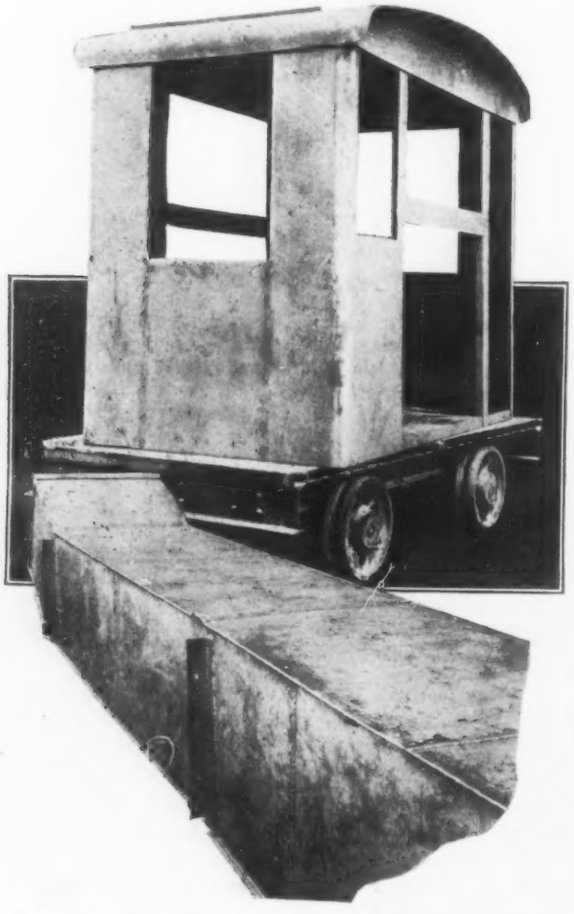
Welding with the Metallic Electrode

The arc should be kept short, not over ⅛ in. in length.

The current should not be greater than those indicated in the table for the electrode diameter. Excessive current causes burnt or porous metal to be deposited.

The arc should be kept constant in length to insure uniformity in the metal deposited.

In welding a seam the electrode should be moved in a zigzag or circular path advancing along the seam.



Locomotive Cab Which Was Welded Throughout. Below this is a chute for metal chips the seams of which were arc welded

The metal will adhere only to the surface on the work actually played on by the arc so care must be used to bring the arc in contact with the whole surface to be welded.

Be sure the electrode is connected to the negative terminal. If the polarity is reversed the arc will be more difficult to maintain and the deposited metal will not be as good as it should be.

In starting the arc, the electrode should be just touched to the work and withdrawn immediately to the required distance. If the electrode is held too long in contact it will weld to the work, causing some delay in freeing it and starting over.

In welding be sure that the arc plays over the entire surface of the joint. The metal of the work is fused by the direct impact of the arc and if molten metal merely runs ahead of the arc, over the solid metal of the work, it will not result in a weld.

The metallic electrode used is generally from 14 to 18 in. long. It may be gripped in the holder, either at one end or in the middle as required by the skill of the operator or the nature of the work.

The operation of welding overhead is the same as in normal welding. The difficulty largely lies in holding the electrode steady in the cramped position usually required. If the arc length is kept constantly short the metal will be successfully deposited, and practice is required to accomplish this. The appearance of an overhead weld is sometimes marred by drops of metal projecting or by uneven thickness of the deposited metal, but this can be overcome by proper manipulation of the electrode. A rest for the arm will sometimes assist the operator to hold the electrode steady.

Amperes Required and Welding Speed

It is difficult to give universally applicable figures covering amperes, speed, etc., for electric arc welding, due to the effect of conditions under which the work is done, the character of the work, and to a very large extent the skill of the operator.

The following figures are based on favorable working conditions and a skilled operator. However, they are approximations only and are given merely as a general guide.

Metallic Electrode Welding

Light Work 25 to 125 amperes.
Heavy Work up to 225 amperes.

Electrode Diameter, in.	*Amperes*	*Correspondence Plate Thickness, in.*
1/16	25- 50	up to 3/16
3/32	50- 90	up to 1/4
1/8	80-150	1/8 to 3/8
5/32	125-200	1/4 up
3/16	175-225	3/8 up

The same size electrode may be used with various thicknesses of plate, the heavier plate will require the use of the heavier currents.

Approximate speeds of welding sheet metal with the metallic electrode are given in the following table:

Thickness Plate	*Speed ft. per hr.*	*Cost per ft.*	*Comparative cost per ft. Acetylene*
1/16	20	2.12	1.78
1/8	16	3.12	4.66
1/4	10	7.13	13.1
3/8	6.5	12.3	36.1
1/2	4.3	19.8	much higher
3/4	2.0	41.7	much higher
1	1.4	61.3	much higher

The above figures are based on average figures for materials and labor. They will probably vary considerably for different localities and will vary slightly with the type of equipment, but the relative costs of gas and electric welding will in general hold true.

The Use of the Carbon Electrode

The holder should grip the electrode from 4 to 5 inches from the end. The electrode should for ordinary work be tapered to a blunt point at the working end to keep the arc from wandering over the end of the electrode. As the electrode burns away with use, the holder is moved back along the electrode to keep length of working carbon constant. The burning away of the electrode will tend to keep the taper approximately constant.

The arc is struck in the same manner as with the metallic electrode, but a longer arc should be used, from 1 to 1½ in. is the average. The arc should not be too short when welding or depositing metal as there is danger of depositing carbon in the weld with the probability of a hard weld resulting. In cutting, or melting off metal, the arc should be kept short, about ½ in. being an average length.

To cut (for which purpose the carbon electrode must be used) the arc is operated like a gas torch. It is held in one place long enough to fuse the metal and allow it to run off. For thin plates laid flat a hole is melted through by holding the arc on one spot, then the electrode is slowly advanced along the desired line, the molten metal dropping out below. For thick pieces, such as shafts, casting, etc., it is desirable to start at the top on one edge and work down, allowing the molten metal to run down through the cut. It is often necessary to follow the molten metal down with the arc to keep it melted until it runs off.

The width of the cut will depend on the size of the electrode used and on the skill of the operator in keeping to a straight line. The cut will be slightly wider than the diameter of the electrode in order to allow the arc to be played on the bottom of the cut, and it will be wider for thick sections than for thin ones. The

edges of the cut will not be smooth, due to masses of the molten metal not running away and also to the fact that the arc will tend to jump from one point to another and cause an uneven cut.

To deposit metal with the carbon electrode, the arc is struck as above, but is not held in one place long enough to melt through. A pool of molten metal is established and a melting rod of metal is fed into the arc and melted down on the work. It should all be heated thoroughly to insure complete union before more metal is added.

Since heavier current can be used with the carbon electrode than with the metallic, faster work can be done in depositing metal. The quality of the weld is not quite so good, however, as when the metallic electrode is used. However, for filling holes in castings, building up worn spots, etc., the carbon weld is satisfactory and should be used.

Due to the high temperature and large amounts of heat liberated when using the carbon electrode, the electrode holder is liable to become very hot and under some conditions to melt away at the end. When the holder begins to get hot it should be plunged in a receptacle of water kept conveniently near the operator.

Cutting speed with the carbon electrode for various values of current strength, and thickness of material will be approximately in accordance with the curves shown in the table.

Carbon Electrode Welding

The carbon electrode can be used for welding and for building up metal in a large number of cases where the metal is not subjected to high strains or where it is under compression only. This process can be used to a very large extent in rough cutting of plates and structures.

The average current ranges for different types of work are as follows:

Light welding	150 to 250 amperes
Medium welding	250 to 350 amperes
Heavy welding and medium cutting	400 to 600 amperes
Very heavy welding and heavy cutting	600 to 1000 amperes

The maximum values of current permissible for the carbon electrodes are as follows:

Diameter of Electrode	*Maximum Amperes*
¼ in.	100
½ in.	300
¾ in.	500
1 in.	1000

Graphite electrodes permit the use of somewhat higher current densities, but the higher cost of graphite electrodes is a serious handicap to their use. Lower currents than the above may be used, but higher values will result in undue burning of the electrode.

For depositing or building up metal by means of the carbon arc on flat surfaces where the work is accessible and all conditions favorable, the following figures may be used:

Current Amperes	*Lb. per hr.*	*Cu. In. per hr.*
200	1½	5.4
300	3	10.8
400	4½	16.2
500	6	21.6

For continuous work the above figures may be used, but for short jobs of ten minutes or less the rate will be double the above.

Cast Iron Welding

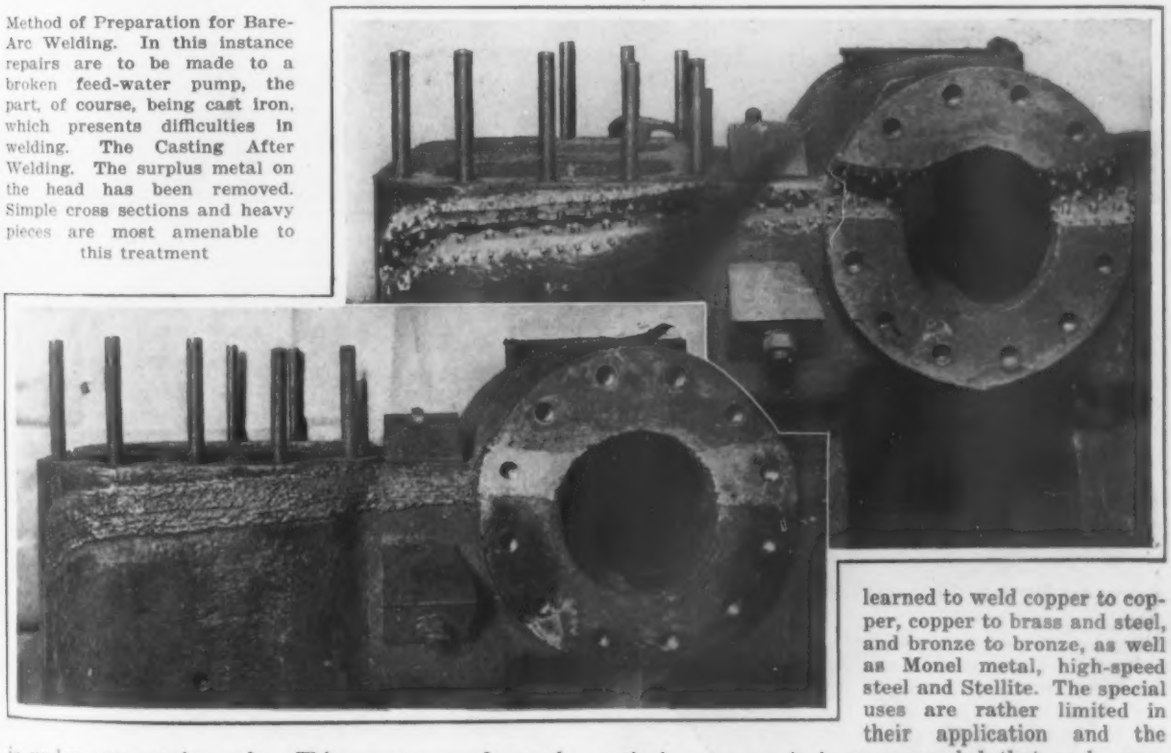
This metal, due to its properties, is unsatisfactory for welding by any method. Its low strength and brittleness cause it to break from expansion and contraction strains unless precautions are taken, and even then a successful weld cannot be assured.

Pieces of simple cross section and heavy pieces present much less difficulty than complicated shapes, but due to the undependable nature of cast iron, care should be used in all cases.

The experience and skill of the operator are large factors in determining whether or not a given weld will be successful.

Other Metals

By experimenting a number of operators have learned to weld copper to copper, copper to brass and steel, and bronze to bronze, as well as Monel metal, high-speed steel and Stellite. The special uses are rather limited in their application and the methods vary, so it is recommended that each operator experiment along the lines suggested by his experience.



Method of Preparation for Bare-Arc Welding. In this instance repairs are to be made to a broken feed-water pump, the part, of course, being cast iron, which presents difficulties in welding. The Casting After Welding. The surplus metal on the head has been removed. Simple cross sections and heavy pieces are most amenable to this treatment

---

The Alemite Metals Co., 341 West Chicago Avenue, Chicago, has changed its name to the Alemite Die Casting & Mfg. Co. This change was made to indicate more fully the scope of the company's activities which have gradually changed from exclusive die casting to die casting and manufacturing. The personnel of the company remains the same as heretofore.

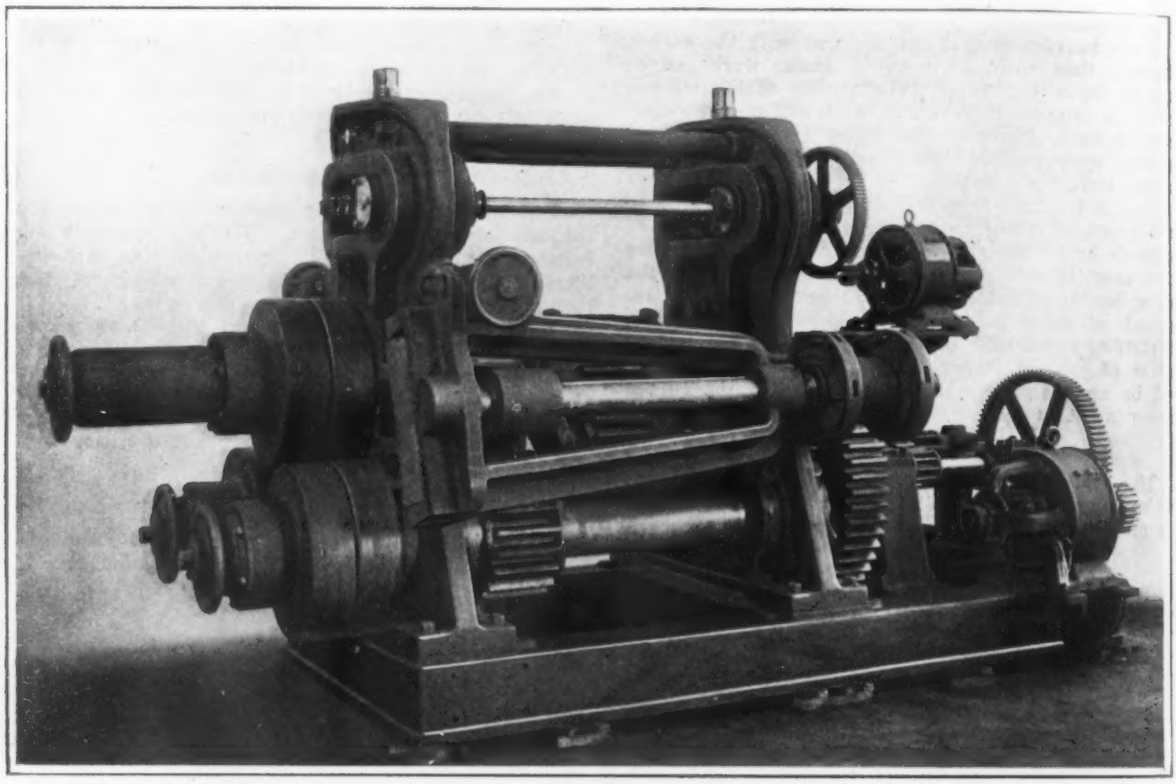
The Sullivan Machinery Co., Claremont, N. H., has arranged for the installation of a new 1-ton electric steel furnace. This is the first such unit to be used at the plant.

Bending Roll for Structural Shapes

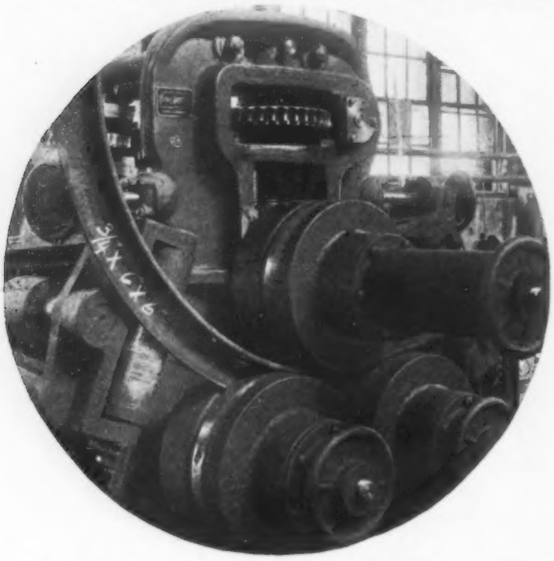
An angle bending roll for bending various forms of steel is being brought out by Wickes Brothers, Saginaw, Mich. This machine is of the open end type with the three rolls gear driven by a motor. It is of rigid construction and has adjustable features in connection with the working parts so that the use of a wrench of any sort is not required by the operator.

radial adjustment for eliminating torsional or twisting tendencies of the section being rolled, and to assure perfectly straight and true courses. The upper roll has a slight slipping tendency when under heavy load by being driven by an independent gear through adjustable friction collars.

The roller collars are vanadium steel castings, and the main shafts are steel forgings. Practically all the gears are steel castings, and the gears connected to the motor have teeth cut from the solid meshing with a phosphor bronze pinion.



Angles Up to 6 x 6 x ¾ In. Can Be Shaped in This Angle-Bending Roll. Adjustable features eliminate the use of a wrench by the operator, and the section being curved can be removed without raising the upper roll shaft



The bending roller collars are arranged in pyramid form, the outer collars being adjustable horizontally to accommodate different thicknesses of angle legs. The upper bending roller collars and their shaft are raised and lowered by power by a spur gear, worm and worm gear and specially designed threaded screws. This shaft is extended to allow a horizontal movement of the outer collar far enough to permit the removal of the section being rolled without raising the upper roll shaft, thus saving time and leaving the rollers in their proper relative position for rolling duplicate diameters without resetting. Side thrust rollers mounted in substantial bails admit of a horizontal and

The machine will roll angle iron, T bars and flat or square bars with the standard roller collars and Z bars, T rails, round bars, pipe channels, I beams and other structural shapes by the addition of special collars. It will roll an angle up to 6 x 6 x ¾ in.

One of these machines has recently been installed by the Mansfield Steel Corporation, Detroit, for rolling motor truck rims and other work. It will roll a 24 x 1-in. plate into a complete circle for a truck rim. It occupies a floor space 7 x 12 ft. and weighs 35,000 lb.

To Train Machinery and Tool Designers

The department of education of the Young Men's Christian Association, East Side Branch, 153 East Eighty-sixth Street, New York, is about to launch a co-operative school of engineering. The plan is to furnish an engineering education, but to first provide for the student's immediate needs by equipping him with a high-grade earning factor. This idea is embodied in its basic and continuation courses.

The basic course is essentially a job-getting course, and is accordingly conducted on a strictly professional basis. Graduates are qualified to get positions as junior draftsmen and are equipped to gain quick recognition for advancement. It is, further, the foundation for all continuation courses, and supplies the mathematical and theoretical subjects prerequisite to advanced work.

The continuation courses are designed to follow after the graduate has secured a position. They provide for further engineering study along general, or specialized lines. These courses lead to training in designing machinery, tools, jigs and electrical equipment.

Finance Will Determine Trade with Italy

Strong Feeling Against America Can Be Corrected—That Italy Leads in Readjustment Is View of L. W. Williams—Praises Italians

HEREWITH are given some observations and conclusions, the result of a visit of several months' duration to European countries, and particularly Italy, by Leonard W. Williams, of the firm of Park & Williams, Inc., dealers in iron and steel, Real Estate Trust Building, Philadelphia. Mr. Williams went abroad to conduct an investigation as to the outlook for certain activities in Europe, in the course of which he studied conditions generally. During the war Mr. Williams was assistant chief of the pig-iron division of the War Industries Board. His sympathy for Italy is keen. Following are his views in connection with that country, as given in a recent interview:

"The situation throughout Europe is so complicated at present that the specialist who goes abroad to investigate the possibilities in his particular line may very easily overlook vital facts which are determining factors in regard to what course should be pursued, but one conclusion that must be reached is that iron and steel men must consider Italy's problems most thoughtfully if they are to do business with that country in the future. Unless there are devised methods of extending credit to the Italians and doing that promptly there is danger of America being the loser. The credit given, there are good reasons for believing that the Italian business, which was so satisfactory during the war, will assume even larger proportions.

Difficulty of Measuring Foreign Situation

"Our business relations with Europe are so dependent on the political, economic and financial policies. not only of some specific country to which it is sought to sell goods, but of all the countries on which dependence is had for raw material or markets, that any investigation confined to one industry without reference to collateral facts, is apt to lead only to the collection of a mass of misleading and conflicting data. This explains why so many who have gone abroad differ in the views formed, and differ honestly.

"For dependable, authoritative information of wide scope it is necessary to rely upon men of great economic and financial training like Mr. Frank Vanderlip, who have had access to and have interviewed all classes of men in all countries, rather than on the specialist in any line whose observations must necessarily be limited.

"Italy, to-day, in spite of the economic handicaps imposed by the poverty of its Government, handicaps which were intensified by the radical import restriction and financial regulations devised and enforced by the Orlando-Sonnino cabinet, has made greater progress toward reconstuction, in my opinion, than England, France or Belgium. The average corporation has plenty of money, as have individuals, and all are endeavoring to find employment for their funds. The plants have definite ideas formulated for their future activities, and while their capacities are in excess of the power of the country to absorb, it must be realized that the Italian mechanic is skillful and can turn his capabilities, under wise direction, into channels productive of articles for which a ready market should be found and probably could be. At Genoa I visited an exhibit which was a revelation in the display of workmanship of a superior quality. The exhibit was very comprehensive, including products ranging from castings and forgings to steam turbines and airplane engines, and left no doubt in my mind as to the ability of the Italian artisan to turn out high-grade work. One exhibit, a case of gears, excelled anything I ever saw in America, not only in the number of unusual motions, but in workmanship. It was a splendid testimonial to its designers and the workmen who constructed it.

"The Italian workman, contrary to a notion common in this country, is a steady, dependable, home-loving man who often excels in his line of work. Very few of the strikes with their accompanying violence which have been reported lately have originated in the ranks of the steel and iron workers, and in all cases the basic cause has been the high cost of living. There are but few strikes launched to achieve political ends or to advance the prestige of a union. The Italian worker wants to work, which is not altogether the case with the workers of some of the other European countries.

"The action of the Italian Government in keeping so many men under arms, questionable or not as the motive may be, has had a good effect so far as employment is concerned, but, of course, this condition cannot be maintained indefinitely, and if work is not resumed generally before demobilization is effected there may be serious trouble. Work can and probably will be resumed just as soon as arrangements can be made to secure raw materials; as a matter of fact securing these is the crux of Italy's problem. The workmen are at hand and the plant owners are prepared.

Italy's Course Restricted Imports

"Under the Orlando-Sonnino régime it was felt that the interests of the country would be best served by keeping all money in the country, and to further this end import permits were made difficult to secure and the Royal Exchange Committee did everything in its power to discourage the purchase of exchange. As a result of these measures the Italian manufacturer found it all but impossible to purchase raw materials which were essential to the resumption of business and could not manufacture sufficient products to supply Italy, to say nothing of providing for export trade. This had a two-fold effect, for there being no goods manufactured for export, steamers taking cargoes to Italy could not get a full return cargo and consequently had to charge more freight on the goods going to Italy and, what is more important, not being able to export in sufficient quantities to balance the imports, exchange could not be maintained, and it fell from a par of 5.18 lire to the dollar to 8.73 lire to the dollar, thus making it necessary for the Italian buyer to pay a premium of over 60 per cent if he wished to purchase in America.

"The Italians realized the seriousness of the situation and looked to America for assistance in solving the problem. It was hoped that sympathy in material form would go from America to Italy, not only because of Italy's part in the winning of the war, a part which they considered a vital one, but also because of the number of Italians who have become American citizens and the number of Americans who have visited Italy. Many plans were based on this hope. While disappointment was caused by the United States Treasury's disapproval of an Italian loan early this year, it was thought that when the last Liberty loan was floated the field would be free and that Italy's needs would receive attention. President Wilson's stand on Fiume destroyed this hope. I do not know the facts governing his stand, having heard only the Italian side, but I do believe the Italians present some convincing arguments. Whatever the right and wrong of the matter, it is certain that the Fiume decision caused a revulsion of feeling and in a large measure caused the former feeling of admiration, amounting almost to affection for America, to change to distrust if not to something worse. There is no doubt that the commercial relations between America and Italy would have been advanced had the Fiume question not arisen. To my knowledge, one of the largest Italian companies cancelled all its plans for increasing its

American connections the day the Fiume letter was published. These plans contemplated large expenditures in America, the incorporation of a bank, the taking over of American commercial enterprises, and the expansion of present connections, including a large fleet of steamships.

Italian Resentment Can Be Overcome

"There is a strong feeling in Italy that the American position on the Fiume question was instigated by French and English interests because these feared that America would be given the business they formerly enjoyed and who therefore sought some means of prejudicing the Italians against Americans and American products. This statement cannot be verified, but it is true that the Italians have been deeply hurt and keenly resent America's position and it has hurt American trade. There still is opportunity to sell the Italians raw and semi-finished materials which they need so greatly if arrangements can be made to advance credits to various Italian firms, whose rating and holdings are high, to carry them over the next two or three years until lira exchange has fallen to a point where the Italian manufacturer is not penalized for doing business with America. To illustrate how vital this matter is, considering the recent purchasing power of the lira: To purchase material in New York which, if the lira were at par, would cost 518 lire, or $100, the Italian recently had to spend 873 lire to obtain the same amount of goods, although the American manufacturer does not get any advantage from the increased expenditure of lire, still receiving only $100.

The lira is worth about 200 per cent in Berlin, so for goods costing 518 lire when the lira is at par, the Italian only pays about 260 lire. Ignoring the question of freight rates—and in this respect the tremendous increase in ocean freight has put us at a serious disadvantage—it may be seen that no matter what sentimental reasons may influence an Italian toward America, it is hard to overlook the fact that he can purchase in Berlin for about 260 lire material which will cost him 873 lire in New York. The disparity illustrated will be overcome, to some extent, as the mark increases in value with the resumption of normal business in Germany.

"If, however, American business follows the lead of an important New York bank which, within the month, is reported to have postponed action on a large loan to an important Italian firm 'pending settlement of the Fiume question,' the steel and iron business which the Italians are anxious to place in America will automatically be given to Germany.

Italian Manufacturer Attentive to Politics

"The Italian manufacturer pays more attention to political matters than the average American manufacturer, and just now he realizes there is a distinction between the American politician and the American business man, and if the American business man shows an appreciation of Italian difficulties, a disposition to aid and a desire to establish a business, it is probable that the acts of American politicians will be discounted, if not ignored, and trade relations may be established which will be of long duration.

"Italy is a fertile field. Her people are active, industrious and reliable. In spite of their resentment over what they consider American injustice they are still anxious to do business with us. Nitti, the premier who succeeded Orlando, has lived in America. His economic ideas are the reverse of Orlando's and he believes that all restrictions hampering the resumption of business should be removed. To this end, it is reported, he is considering the abolition of the present control over imports and exchange, but this cannot be accomplished until the bond issue which it is understood he will try to float in the United States is a success. If the money can be raised here I feel America will be justified in looking for a large and steadily increasing volume of business from Italy—a country which must depend on outside sources for its coal, iron, semi-finished steel, cotton and leather."

Government Ship Transactions

WASHINGTON, Aug. 4.—Renewal of trade with Germany is being hampered by the foreign credits situation. It has been found advisable by the Shipping Board to cancel one allocation of a ship to carry general cargo from New York to Bremen because of a lack of cargo, due to credit conditions.

The board allocated two ships from New York to German ports immediately after the lifting of the blockade. One was the Zaca, which left New York within the last couple of days, bound for Hamburg. This is the first vessel to leave an American port for Germany since the lifting of the blockade. The other ship was the Liberty Glow, which was to have begun to load Aug. 2. The Liberty Glow was to go to Bremen. The present plan is for the Zaca to touch at both Hamburg and Bremen.

Two ships have been allocated to go to German ports from Philadelphia. One is the Edgecombe, which has started to load her cargo, and will go to Hamburg. The other is the Liberty. It will begin to load Aug. 15 and will go to Bremen.

The West Zula will begin to load at Boston on Aug. 5 to carry general cargo to Hamburg. The Schodack will load at Baltimore within the next few days. It will go to Hamburg. The Fresno will travel from New Orleans to Bremen, its loading date being about the middle of August.

This makes a total of six ships either en route or about to start with general cargoes. In addition to them three ships will carry cotton to German ports in August. The cotton ships are the Clairton, which will go from New Orleans to Hamburg early this month; the West Arvada, from Galveston, Texas, to Hamburg, early in the month, and the Western Plains, from Charleston, S. C., to Bremen the middle of August.

Ocean Rates Reduced on Coal

The Shipping Board has reduced rates on coal and coke from North Atlantic ports to a number of ports in Norway, Sweden, Denmark, Finland and Spain. The reductions range from $2 to $4 per ton. The purpose is to aid the exportation of American coal.

Negotiations for the sale of 100 steel coal-burning steamships of the lake type have been concluded by the Shipping Board. The sale was made to J. Herbert Anderson, representing the Anderson Overseas Corporation, New York. The purchase is understood to be for French and Italian account. The tonnage of these vessels range from 3300 to 3600 deadweight tons. About $80,000,000 is involved in the transaction. The Shipping Board will deliver the first vessel not later than Aug. 10 and not less than six vessels a week thereafter.

Selling Wooden Ships

According to a cable received by the board from its London agent a purchaser stands committed to take twenty wood steamships of the Ferris type. The purchaser has been given a 30-day option on 100 additional ships. Under the terms of the sale the buyer agrees to pay 10 per cent of the purchase price upon the signing of the contract and the balance upon delivery. The ships are of the 3500 deadweight ton class. The sale price is $300,000 each.

This makes a total of 58 wood ships sold by the board. There are 174 wood ships under operation by the board in varied services. These included 35 plying between the Pacific and Atlantic, 34 between the United States and the United Kingdom, 13 between the United States and Scandinavian ports, 13 between the United States and the west coast of South America, 12 to the West Indies, 9 to France, 8 to the East Coast of South America, and the others in scattering services.

The Shipping Board has just allocated wood ships to carry steel rails and lumber from Jacksonville, Fla., to Havana.

The Cleveland Purchasing Agents' Association held its annual outing at Nela Park, Cleveland, Saturday, Aug. 2. A program of sports was carried out.

Government Promotion of Trade with Germany Delayed

WASHINGTON, Aug. 5.—The official resumption of commercial and diplomatic relations with Germany is still being held up by the delay in ratifying the peace treaty. The Bureau of Foreign and Domestic Commerce has announced officially that until the peace treaty has been ratified by the Senate, the bureau cannot undertake trade promotion in Germany.

In the meantime the official ratification of the treaty by any three of the other chief signatories would make peace effective as to them, and thus handicap American financial and commercial interests. To prevent this, it is proposed to have Congress pass a formal resolution declaring the war with Germany at an end.

Philip B. Kennedy, recently appointed director of the Bureau of Foreign and Domestic Commerce to succeed Burwell S. Cutler, has given out a statement going into considerable detail with regard to the difficulties in the way of restoration of trade in Europe. He declares that it is chiefly dependent upon the return to work of the different peoples. This in turn is dependent upon complicated adjustments. Mr. Kennedy has recently returned from London where he was commercial attaché to the American embassy.

"An element that adds to the difficulty of the situation in Germany," said Mr. Kennedy, "is the disorganization of the elaborate machinery for carrying on foreign trade, which, in the pre-war days, was one of the outstanding features of the economic life of Germany. Most of the German plants operated more or less with a view to the disposal of the product in foreign markets, and generally through German merchandising, financial and shipping agencies. Now all these agencies have either been entirely destroyed by the war or very seriously affected, and while during the abnormal period of reconstruction the merchandising problem may be simplified by the pressing demand for certain commodities, it undoubtedly exercises a rather serious retarding influence in the present situation.

"We have some additional factors that are exercising an injurious influence on the working capacity of the entire nation. There is the long period of underfeeding and consequent loss of physical and mental power. There is the reaction from the strain of war production under abnormal conditions. There is the terrible disappointment at the outcome of the war. And, finally, the uprooting of the political forces that have dominated, not only the political, but also the economic life of the country. We may also assume that, whatever the final form of the political structure adopted by Germany, labor will demand a higher standard of living and better working conditions, and, perhaps, a share in the directing of industry."

Conditions of Trading with Siberia

WASHINGTON, Aug. 5.—Because of misapprehension regarding trade with Siberia, the Department of State has issued an explanatory statement covering the present condition of commerce with that country.

"The so-called Allied Purchasing Committee, of which Capt. Geroge E. Spengle is chairman, is a subcommittee of the Interallied Technical Board of the Committee for Supervision of the Chinese Eastern and Transsiberian Railways," says the Department of State. "This committee will make purchases of supplies and materials for the Siberian railways by direction of John F. Stevens, president of the Technical Board of the Interallied Committee. All orders for material to be purchased in the United States for use in connection with the railroads will be placed by the committee through the Director General of Military Railways, War Department. This committee has nothing to do with purchases of other than railroad material and supplies. The Director General of Military Railways is in close touch with all American manufacturers, and is in position to expedite orders for badly needed supplies.

"A misapprehension has aparently arisen to the effect that an interallied committee has been regulating exports and imports in Siberia. No one has been authorized to represent the United States on such a committee. A number of informal meetings have been held by different allied representatives in which certain resolutions regarding the financial situation and foreign trade were urged, but these have not been acted upon by the Omsk Government.

"At present there is practically no restriction placed on trade with Siberia by the War Trade Board section of the Department of State. A general export license, RAC-77, covers practically all merchandise which may be exported to Siberia, and an import license, PFB-37, covers all imports."

Belgian Purchasing Agencies

Co-operative purchasing bureaus have been established in Belgium under the auspices of the Belgian Ministry of Reconstruction. For supplying iron, steel or metal-working equipment manufacturers should address the following organizations:

Mining Industry

BORINGS, WELLS AND DRILLING

Société Coopérative, Groupement de l'Industrie des Sondages, Fonçages de Puits et Travaux de Mines, 34 Rue de l'Association, Bruxelles.

COAL

Société Coopérative, Groupement Charbonnier Belge, 40 Rue Royale, Bruxelles.

COKE

Société Coopérative Fabricants de Coke de Belgique, 11 Rue du Gentilhomme, Bruxelles.

Raw Metals

IRON AND STEEL FURNACES

Société Coopérative, Groupement des Hauts Fourneaux et Aciéries Belges, 9 Quai du Commerce, Bruxelles.

LEAD ROLLING MILLS

Groupements des Laminoirs de Plomb, 40 Square Amboirix, Bruxelles.

METALLURGISTS OF HAINAUT PROVINCE

Union des Métallurgistes du Hainaut, 21 Rue de Montigny, Charleroi.

STEEL AND IRON PLANTS OF LIEGE PROVINCE

Société Coopérative des Usines Transformatrices de Fer et d'Acier de la Province de Liége, 8 Rue des Dominicans, Liége.

ZINC, LEAD AND SILVER

Union Professionnelle, Fédération des Fonderies de Zinc, Plomb et Argent, 35 Avenue des Arts, Bruxelles.

Manufactured Metals

AUTOMOBILES, GARAGES

Union Professionnelle des Garagistes Automobiles de Belgique, 80 Rue de Namur, Bruxelles.

STEEL CONSTRUCTION

Société Coopérative de Construction Métallique, 16 Rue d'Egmont, Bruxelles.

Transportation, Public Service

GAS PLANTS

Société Coopérative, Les Exploitations Gazières de Belgique, 133 Chaussée d'Ixelles, Bruxelles.

INTERURBANS

Société Coopérative, Association des Vicinaux de Belgique, 32 Rue Eloy, Bruxelles.

POWER PLANTS

Société Coopérative, Fédération des Centrales d'Electricité de Belgique, 158 Rue Royale, Bruxelles.

STREET CARS

Société Coopérative, Association des Tramways Electriques de Belgique, 15 Avenue de la Toison d'Or, Bruxelles.

ASBESTOS

Groupement des Fabricants et Importateurs Belges d'Amiante, 10 Rue Stephenson, Bruxelles.

Correspondents du Comite Central Industriel

ENGINEERING

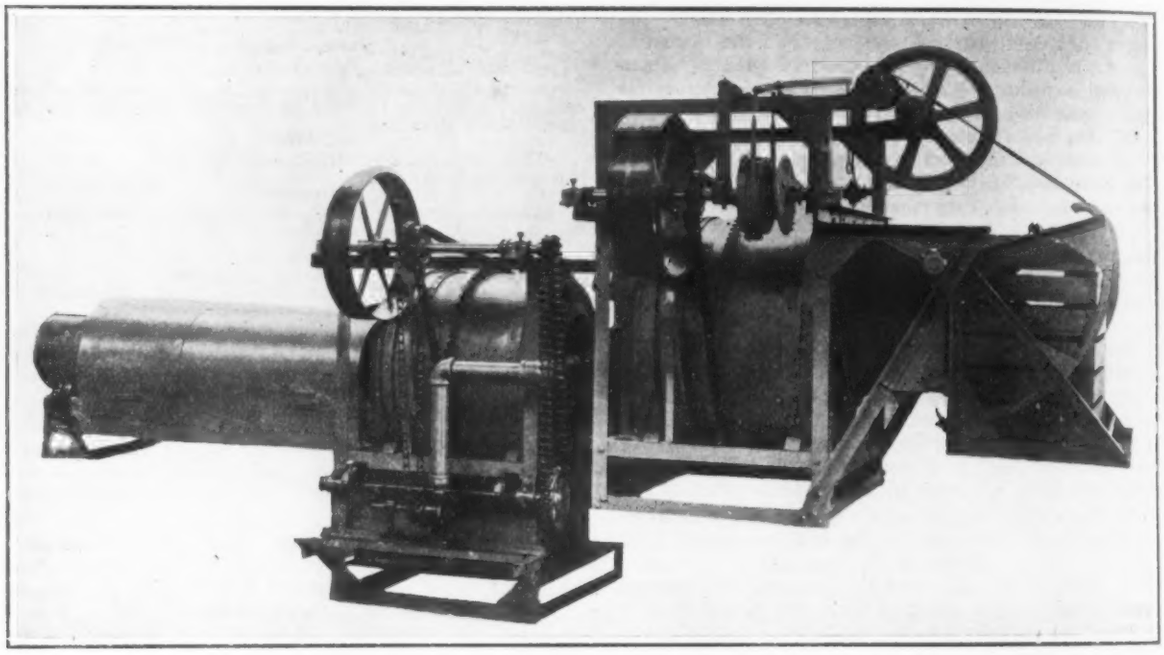
M. Servais, attaché au secrétariat de l'Association des Ingénieurs, 16 Quai de l'Université, Liége.
M. Marcel de Beer, 15 Rue Longue du Marais, Gand.
M. Robert Dulait, 23 Rue Leopold, Charleroi.

Viewpoints on South American trade expressed by prominent men of both continents at the Second Pan-American Commercial Conference, Washington, D. C., June 2-6, are given in "Trade Thoughts of the Two Americas in 1919," issued by the Irving National Bank, New York. The extracts from speeches, which are classified and progressively arranged, deal with diplomatic relations, shipping conditions, advertising, credit problems and the removal of trade barriers. The pamphlet is number 28 of a series dealing with national prosperity.

Combination Washing, Tumbling and Liming Machine

The Ideal Concrete Machinery Co., Cincinnati, has recently completed a machine designed to wash, tumble and lime forgings that have been pickled, thus to do away with the rehandling required when these operations are performed by individual units.

Forgings are taken direct from the pickling tank in a basket, 18 x 29 x 30 in., which is set directly in the frame at the end of the machine by a crane. The frame then automatically turns the pickling basket over, discharging its contents into the first drum, which tumbles the forgings at the same time they are being washed by a heavy stream of water. When clean, the entire batch of forgings is discharged by a chute actuated by a lever on the opposite side of the machine, into the secondary drum through which is circulated a lime solution. As the forgings advance through this secondary drum they



The Three Operations of Washing, Tumbling and Liming of Forgings Are Performed in This Machine Without Rehandling

are coated with lime and then pass to an 8-ft. steam-heated screen, in which they are thoroughly dried.

The primary or washing drum is 48 in. in diameter by 38 in. in length, and is made of ½-in. plate. The discharge chute and cups are also made of ½-in. plate. The secondary drum is 42 in. in diameter by 38 in. in length. The lime in this drum is circulated from the tank beneath, the solution being kept constantly in motion by an agitator actuated by eccentrics. The arrangement is such that the end of the screen and the primary drum set on the floor level, and the secondary drum sets in a pit, thus to reduce the exposed height.

Addressing Correspondence to South America

The importance of giving the full name on correspondence to South America is pointed out in Trade and Transportation Bulletin, published by La Salle Extension University, Chicago. The article states that many names of firms in South America end with an initial, as in the following example:

Francisco Carbonell W.
Hernando de Castro P y Cia.

Business houses in the United States should use this initial always, as it is important for two reasons and serves a definite purpose.

The principal object of the initial is to avoid confusion of names and mail, telegrams, etc., caused by many persons having the same name, the initial serving to distinguish one family from another. This condition emanates from the fact that in the early times there were few wealthy families and these became interrelated by marriage, which accounts for the great number of similar surnames. Given names are also often similar, due to the custom of naming children for the saint whose fiesta day is approximate to the birthday. Also, very often family names are given children. Another factor is the pride of family connections found in all Latin-American countries. The last initial denotes the mother's surname, as for example:

Hernando de Castro P y Cia,
Hernando de Castro (Palacios) y Cia,

Hernando de Castro's mother's family name having been "Palacios." This matter is one of the small courtesies which make up a successful business relation.

Danger in Scrap Pipe from Explosive Works

Dealers in, as well as original sellers of, iron and steel scrap from explosive plants are warned by the Bureau of Explosives, New York, in a special bulletin, to guard against explosions caused by guncotton, picric acid, or TNT inside of pipes or receptacles. The following are instances of such accidents: Damage to a metal plant in the melting down of lead pipe containing picric acid, explosion in a storage yard because of contact of a lighted match with nitrocellulose, the severing of a hand from an explosion resulting from the crushing of pipe between two hammers, killing of employees cutting up pipe from the oil fields of Oklahoma, in which a detonating cartridge had been left. One explosive company makes a double inspection of all pipe leaving its plants; it is first burned in a woodpile and then inspected, each piece being marked with red paint; after it is loaded on cars another inspection is made, markings with blue paint indicating it.

A shipment of 44,254 ft. of conveyor and elevator belting weighing 131 tons was made recently by the B. F. Goodrich Rubber Co., Akron, Ohio, to the Pennsylvania Railroad Co.'s new grain elevator at Canton, Md. Seven box cars were required to transport it. This belting will handle, store and transship grain reaching the coast over the Pennsylvania Lines, the elevator being specially designed for loading vessels for export and coastwise trade. The equipment will handle approximately 2,000,000 bushels of grain daily.

The American Metallurgical Corporation, Philadelphia, announces that it has come into control of the Charles A. Weeks patent issued Feb. 15, 1910, on the original rocking type of furnace for the manufacture of nonferrous alloys.

STRUCTURAL EXPORT MARKETS

Government Reports from England, Japan, Spain and Switzerland

WASHINGTON, Aug. 5.—The Bureau of Foreign and Domestic Commerce has compiled a series of reports concerning the foreign markets for structural iron and steel.

Consul General Skinner, at London, contributed to this symposium a statement prepared for his office by an expert in construction work, excerpts from which follow:

"There is considerable demand in England for structural steel plates and shapes, especially for use in shipbuilding and bridge work. There is a big demand for steel bars for various purposes, such as re-enforcing concrete, cold drawing, general blacksmithing and working-up purposes. A very large tonnage of bars has in the past been imported from Germany and Belgium, but America has been able to maintain a certain amount of trade with buyers who considered its material of a higher grade than the Continental product and more suitable for their requirements. The demand for plain and galvanized sheets in this country has been almost entirely met by the home manufacturers, who have a very large production. It is impossible to predict whether after the conclusion of peace there will be a good market for the American products."

Consul Robert Frazer, Jr., at Kobe, made the following report on the situation in Japan:

"There has been an increase of several hundred per cent in the importation of steel goods since the beginning of the war, due primarily, of course, to the growth of the shipbuilding industry. Many modern buildings of re-enforced concrete, or of brick or stone with structural steel framework, are being erected, particularly in the cities of Kobe and Osaka. Modern factories embodying steel in the construction work are also being built in the outlying districts. Owing to the fact that there is a scarcity of steel in the Japanese market and that it is more profitable to use the available steel for shipbuilding than for other purposes there will, in all probability, be a large demand for steel suitable for building and for railroad construction."

The situation in Spain is summed up by Vice-consul W. Bruce Wallace, Corunna, as follows:

"The normal market for structural steel in this district is quite small. There is a good market for galvanized sheets, both plain and corrugated. Steel beams are classified under No. 91 of the Spanish tariff and pay a duty of 17 pesetas per 100 kilos ($1.49 per 100 lb.); iron sheets under No. 63 pay 10.30 pesetas per 100 kilos ($0.90 per 100 lb.). German dealers gave two or three months' credit and at times even extended the time. American exporters in pre-war times requested payment upon arrival of the goods at Corunna, allowing 2 per cent discount. The war-time method has been to draw on the consignee when the goods leave the factory or warehouse. The consignee is thus compelled to pay his drafts sometimes four or five months before he receives the goods. This method is criticized by the Corunna merchants. British firms granted one month credit from the time the goods were loaded on the ship, so that Corunna merchants had at least twenty days' time after the arrival of the goods.

"Business can be done after the war under the same conditions as in pre-war days, namely, payment upon the arrival of the goods, at 2 per cent discount; but if the war-time methods of American firms are continued, their opportunity of gaining a strong foothold in this market will be lost."

Two reports are published concerning the situation in Switzerland. The first of these, from Consul William P. Kent, at Berne, declares:

"In 1915, which was about a normal year for the importation of iron and steel, the quantities of these commodities coming into Switzerland amounted to 300,000 tons, valued at $15,000,000. Of this Germany is credited with $8,000,000, England $3,000,000, Austria $700,000 and the United States $600,000. Large stocks of metals intended for the manufacturer of munitions may appear on the market in the near future. Germany, according to the latest trade convention, should furnish Switzerland 20,000 short tons of steel and iron monthly, and is delivering (February, 1919), about two-thirds of this quantity."

The second report is from Vice-consul John T. McCutcheon, Lausanne: "The greatest supplier of the local market was the Burbacher foundry in Luxemburg, which advertised extensively in this district and furnished the German type or normal profile, which is the most greatly in demand here. Before the war small bars, round and square, were selling for 18 fr. per 100 kilos ($35.39 per gross ton). At the end of 1918 the price was quoted at 100 fr. per 100 kilos ($196.45 per gross ton at normal exchange rates), and other structural steel had advanced in proportion.

"The great increase in price has reduced building operations to a minimum. During the war most of the steel came from German Switzerland, but the output of that region is not nearly enough to supply normal demands. From the foregoing it is evident there will be a market here when conditions become normal again if material can be supplied at an advantageous figure. Structural iron and steel are classified in No. 899 in the Swiss federal import tariff and pay an import duty of 6 fr. per 100 kilos net weight (equivalent now to about 49c. per 100 lb.).

"The preferable method to gain a footing in this market would be to establish an agent, with a warehouse stock, in Lausanne or other large Swiss center for the whole of Switzerland. Prices should be quoted c.i.f. a Swiss frontier city, such as Vallorbe, Lausanne or Geneva. Dealers in Lausanne usually combine in a syndicate for importing purposes."

Decrease in Sheffield Steel Production

The Bureau of Foreign and Domestic Commerce also reports a decreasing production of crucible steel in the Sheffield, England, district. The main causes are said to be two in number: (1) The fact that at close of hostilities the Government possessed an enormous quantity of high-speed steel and tools—as well as alloys, such as tungsten—and these are now being released; and (2) America, France and Italy, some of the colonies, and India are now, in the main, supplying their own needs. It is asserted that steel makers can sell plenty of their production at present in the home market, but manufacturers with export business realize that in order to compete with the output of other countries, they must be able to obtain as cheap steel as competitors do. In this connection it is reported they are buying cheap grades of American steel, which may soon be supplemented by billets from Lorraine.

Owing, however, to the possibilities of output having been doubled, the erection of the 12 new 50-ton Siemens furnaces in Sheffield has been suspended. Many of that size already existing are stated to be idle.

O. F. S.

Basis of Selling Government Machine Tools to Schools

WASHINGTON, Aug. 4.—The Senate Military Affairs Committee in reporting out Senator Wadsworth's bill for the sale of surplus machine tools of the War Department to trade and technical schools and universities increased the minimum price to be charged. The bill introduced by Representative Caldwell and on the House calendar fixed 10 per cent of the cost as the minimum. Senator Wadsworth introduced the bill in the Senate with the 10 per cent minimum, but the committee, of which he is chairman, decided that was too low a figure, even though it was the purpose to give the schools the advantage of a very low price. Taking depreciation into consideration a minimum price of 20 per cent is now proposed.

C. E. Johansson, Inc., New York, manufacturer of gages, has started a publication called Johansson Journal.

CONVEYORS SPEED ASSEMBLY

Parallel Chain and Roller Lines Effect Economies in Motor Plant

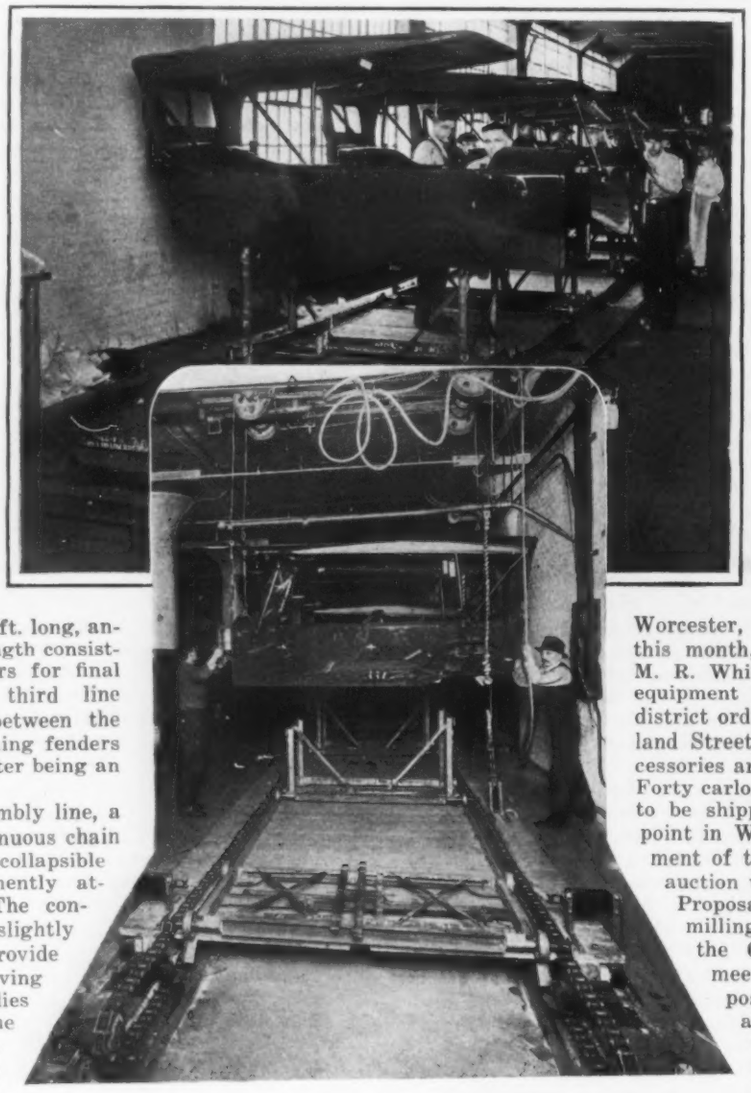
An important improvement in handling methods used in the progressive assembly of automobiles has recently been devoloped at the plant of the Hudson Motor Car Co., Detroit. Usually car chasses and bodies during the final assembly are placed on cradles fitted with rollers, which are moved through the assembling department by hand or power. This necessitates the use of a large number of cradles, and the empty cradles take up a large amount of floor space and require a certain amount of labor in returning them to the loading points.

In the new Hudson final assembly department the use of the ordinary type of cradles is entirely eliminated, space is otherwise conserved by a compact arrangement, and increased economy has been effected. The assembly of cars is done on three parallel lines, one for bodies with a conveyor 300 ft. long, another of the same length consisting of two conveyors for final assembly, and a third line shorter in length between the other two for attaching fenders to the bodies, the latter being an overhead line.

In the body assembly line, a special type of continuous chain conveyor to which collapsible cradles are permanently attached are used. The conveyor is raised slightly from the floor to provide room for the moving mechanism. The bodies are placed on the cradles by a pneumatic hoist after they have been painted and the top attached, and while the bodies are passing down the line the levers, vacuum gasoline tank, and all the body fixtures are attached. An automatic trip is provided at each end of the conveyor, the one at the lower end causing the cradle to fold up after the assembled body is removed, as shown in one of the illustrations. After the cradle has traveled back to the upper end of the conveyor under the platform, it unfolds automatically into its upright position. The capacity of the conveyor is thirty-five bodies.

Near the end of the body assembly line the body is picked up by an overhead pneumatic hoist and conveyor and carried across to an overhead line along which the bodies move by gravity on rollers. The only operation here is the putting on of the fenders. This line is built on a platform, storage space for fenders being provided under the conveyor, and under the platform beneath, parts are kept for the body assembly line, and for the final assembly line on each side.

Final assembling is done on two lines. The chasses come from the lower floor with the wheels and tires on and during the final assembly the chasses move lengthwise along two chain type conveyors, the car wheels resting on the conveyor chain. This method represents a departure from the usual practice of placing the chasses sideways on cradles in the final assembly line, and results in a large saving of space as well as the elimination of cradles. Here the controls are attached, bodies are put on and the controls are connected to the bodies. A pneumatic hoist and conveyor carries the bodies across from the overhead body line to the final assembly line. After the car is completely assembled, it is supplied with gas, oil and water, run off the line under its own power and taken to the lower floor in an elevator ready for final testing.



A Folding Cradle on a Conveyor Supports the Body During Assembly. At the end of the line, the assembly is completed, the body raised and the cradle is automatically folded and then conveyed on the under side of the platform back to the beginning of the conveyor line

Auction of 250 Machine Tools

About 250 Government machine tools, together with shafting, belting and other equipment, will be auctioned off at Worcester, Mass., some time this month, according to Capt. M. R. White of the plant and equipment department, Boston district ordnance office, 19 Portland Street. The tools and accessories are valued at $200,000. Forty carloads are loaded, ready to be shipped to the assembly point in Worcester. Announcement of the date and place of auction will be made shortly. Proposals for the sale of 17 milling machines held by the Government did not meet with any bidding, possible buyers probably fearing lest the machines be for too specialized purposes. Government officials are intending to get full value for these machines and have already inquired from manufacturers as to the value of the different makes of machines.

The Hammond Steel Co., Syracuse, N. Y., which recently increased its capital stock from $1,000,000 to $1,700,000, will make plant extensions to cost approximately $250,000. The improvements will include furnaces, rolling mill and power plant. The mill building will be 80 x 260 ft. with 40 x 60 ft. annex.

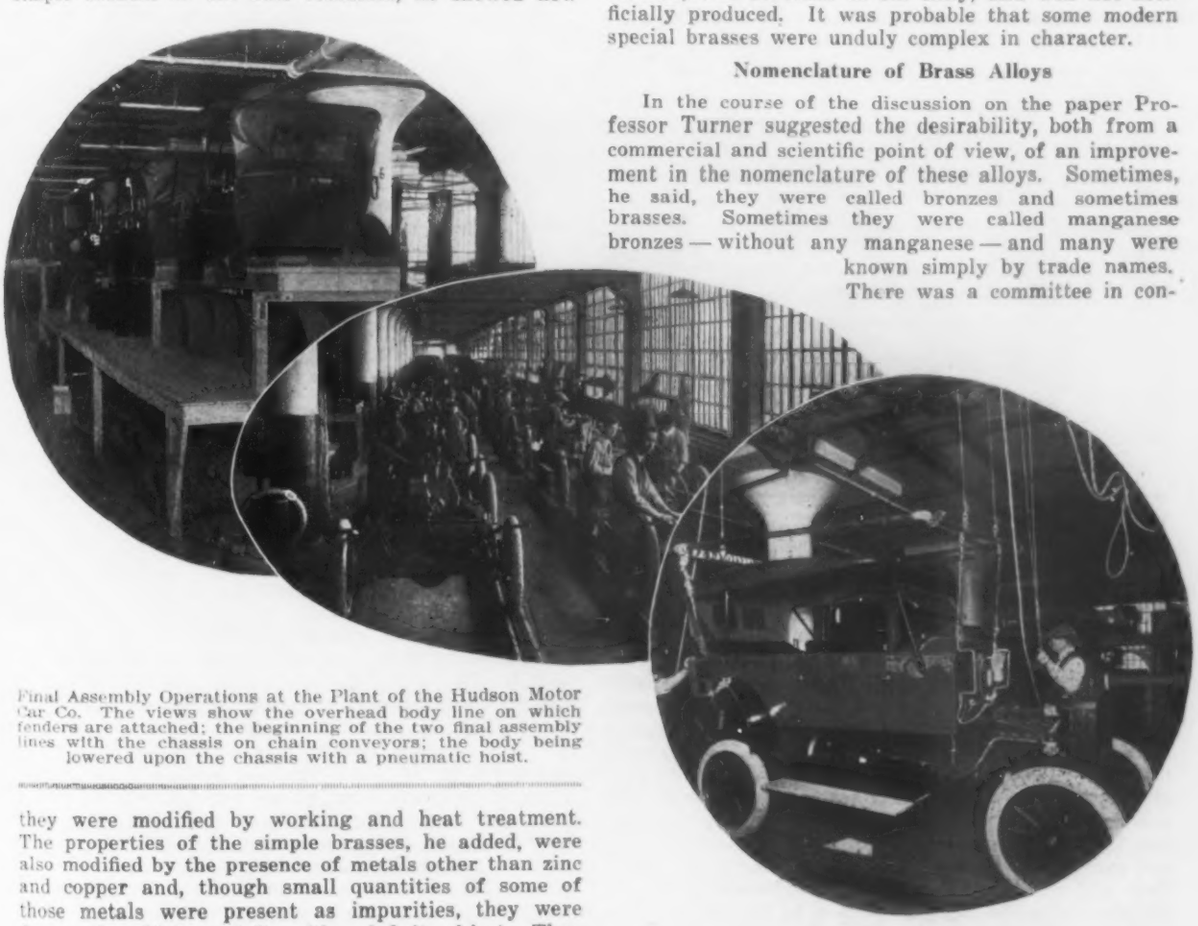
The National Commercial Refrigerating Co., recently formed with a capital of $600,000, has taken over the plant in Youngstown, Ohio, formerly operated by the F. W. Perry Machine Co. The new company will manufacture iceless refrigerating apparatus. F. W. Perry is president.

BRASSES OF UNUSUAL STRENGTH

Effect of Manganese, Nickel and Other Metals —Cold Working and Annealing

"Copper Alloys of High Tenacity" was the subject of a recent paper by Dr. O. F. Hudson of the Royal School of Mines (British), presented by him at a joint meeting of the Birmingham Metallurgical Society and the local section of the Institute of Metals. After explaining that he would confine himself to one section of the copper alloy group—those alloys consisting essentially of copper and zinc, usually known as high-tensile brasses— he said:

Brasses may be divided into two kinds: The pure or simple brasses, consisting essentially of copper and zinc only, and the special or complex brasses, in which various other metals are present in important quantities. Dealing with the mechanical properties of the simple brasses in the cast condition, he showed how they were modified by working and heat treatment. The properties of the simple brasses, he added, were also modified by the presence of metals other than zinc and copper and, though small quantities of some of those metals were present as impurities, they were frequently added specially with a definite object. Thus lead gave good machining properties. Tin increased the strength and hardness of the brass, but the amount that could be usefully added was limited to small percentages, varying with the general composition of the alloy; the loss of ductility became serious when those limits were exceeded. Tin was also sometimes a constituent of more complex brasses, usually in such quantities as to be retained in solution.



Final Assembly Operations at the Plant of the Hudson Motor Car Co. The views show the overhead body line on which fenders are attached; the beginning of the two final assembly lines with the chassis on chain conveyors; the body being lowered upon the chassis with a pneumatic hoist.

Manganese and Nickel in Brass

The presence of iron in brasses increased their hardness and strength, and manganese, which was another metal widely used for the production of high-tensile brasses, increased the tensile strength and elastic limit, and, as usually constituted, decreased the elongation. A number of special brasses contained nickel to the extent of as much as 2 or 3 per cent, and the use of nickel in this connection was now of considerable importance. Aluminum, in small quantities, was used in special brasses, giving increased strength and a high elastic limit, without very seriously affecting the ductility. Aluminum was hardly ever used alone, but in association with such metals as iron, manganese and nickel. Generally, the high-tensile brasses contained more than one added metal, in addition to copper and zinc, and it was not easy to state in every case what was the exact function of each of the added metals.

Cold Working and Annealing

It was probably not good practice to attempt to raise the elastic limit of simple brasses by cold working. Annealing, in the ordinary sense, lowered the tensile strength very considerably. But annealing for a short time at a low temperature actually gave rise to an increase of tensile strength in the case of cold-rolled brass. Although the yield point was lowered, it was still higher than in the fully annealed metal, while such metal had a comparatively high resistance to fatigue. Tensile strength might be still further increased by work, but in any case a large proportion of the increased strength, as compared with the simple brasses, was inherent in the alloy, and was not artificially produced. It was probable that some modern special brasses were unduly complex in character.

Nomenclature of Brass Alloys

In the course of the discussion on the paper Professor Turner suggested the desirability, both from a commercial and scientific point of view, of an improvement in the nomenclature of these alloys. Sometimes, he said, they were called bronzes and sometimes brasses. Sometimes they were called manganese bronzes — without any manganese — and many were known simply by trade names. There was a committee in connection with the Institute of Metals which had suggested general lines of nomenclature for alloys, but it had not yet got so far as complex brasses. The work was interrupted by the war.

The method that appeared to Professor Turner to be the simplest was somewhat as follows: All these brasses were certainly coppers, because they contained more than 50 per cent of copper. They were copper influenced by the presence of some other element. So that, for instance, cartridge metal, 70-30, was zinc-copper, but what zinc-copper? It was zinc-copper with 30 after it. That meant zinc-copper containing 30 per cent of zinc. Muntz's metal would be zinc-copper 40. From a manufacturer's point of view it would be some time before any method such as that came to be adopted, but they had to begin at the scientific end first, and many men in the trade were adopting scientific methods. He hoped that the time was not far distant when, instead of regarding these things as mere trade names, or as names which had no significance, it would be possible to classify the complex brasses in a systematic and readily understandable manner.

TO STUDY STEAM AUTOMOBILE

Chicago Company Which Made Tools for War Work Enters New Field

The Amalgamated Machinery Corporation, 72 West Adams Street, Chicago, which won prominence during the war through the design and manufacture of shell-turning and gun-boring machinery, has focused its engineering capacity on the motor industry with the aim of demonstrating the advantages of steam as a motive power for passenger and industrial vehicles. The company does not propose to launch a large production program until it has perfected a steam-driven automobile which merits a place at the head of existing designs of motor-driven cars. To this end a number of patents have been acquired and every effort will be exerted to supplement these with features which will make for maximum efficiency and endurance. The first aim of the corporation is to make a high-class pleasure car. When it has done this to its own satisfaction, attention will be directed to the manufacture of other types of machines embodying the same principles of design.

The company has obtained all manufacturing rights in this country under patents owned by the General Engineering Co., Detroit; the Doble-Detroit Steam Motor Co. and several other interests. M. J. Hammers, president of the Doble company, and A. V. Frenier, vice-president of the General Engineering Co., have become associated with the Amalgamated Machinery Corporation. W. H. Winslow, of Winslow Brothers, founders and machinists, Chicago, has been elected a vice-president, and will give the company the benefit of his experience in boiler design. James L. Breese, Jr., formerly chief engineer, American Locomotive Co., and now chief engineer of motor aeronautics, United States Navy, will also join the company. Mr. Breese is best known to the public as the chief engineer of the famous NC-4. L. R. Wilder, president and general manager, L. I. Yeomans, vice-president, and W. A. Strong, secretary, will continue in those capacities with the corporation.

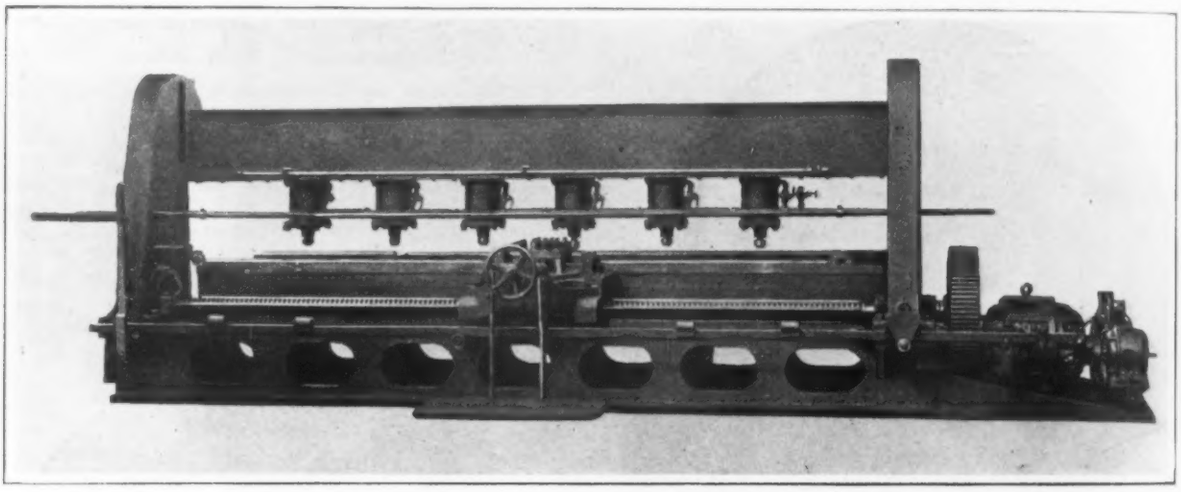
The patents now in the possession of the company combine the better features of a number of steam plants heretofore manufactured by separate interests. One of the most important advantages of the vehicle the corporation will build will be its ability to burn a non-volatile fuel without vaporization and to control combustion without the use of a pilot light. An experimental machine which has already been constructed consumes but 1 gal. of kerosene every 14 miles. The engine will be equipped with an air-cooled condenser, forced draft being supplied through the agency of a turbine operated by exhaust steam from the engine before it passes into the condenser. The use of a condenser is expected to eliminate all troubles arising from accumulations of scale and the bother of frequent refilling of the water reservoir. One filling of the water tank, it is asserted, is good for 1000 miles. The boiler is of a welded water-tube type, equipped with a superheater, and constructed of interchangeable sections.

The company is constructing a five-story addition, 90 x 300 ft., on the site of its plant at Thirty-seventh Street and Racine Avenue, Chicago.

Plate Planer with Safety Features

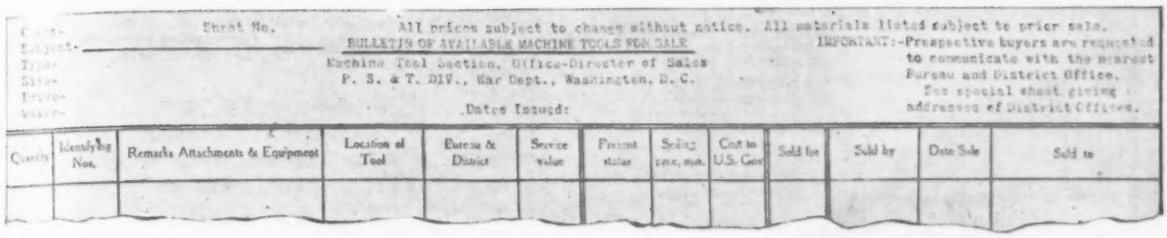
A plate planer that has a number of new features, particularly improved safety devices, has been brought out by the Cleveland Punch & Shear Works, Cleveland. The capacity of this machine is for plates up to 10 ft. in width.

The screw which propels the carriage along the ways rests in a trough throughout its entire length, and is equipped with ball thrust bearings at each end, thereby keeping the screw in tension. The carriage has an in and out adjustment and is fitted with a tool holder carrying two tools so arranged that the inoperated one does not drag. This tool holder is of the swiveling type, and rotates about a king pin. A bent handle located directly behind the adjusting hand wheel on the carriage is used to swivel the tool holder by hand if desired. The operator rides on a platform with the carriage, and he may reverse the carriage at any point in its travel without leaving the platform. Thus, if he starts a cut at one end the depth of which does not satisfy him, he may immediately reverse, feed in deeper, and proceed with the cut. The machine has six pneumatic jacks, each of which is equipped with an air cock, thus to permit of shutting off of any number of cocks when planing narrow plates. All operating jacks may be opened or closed simultaneously from any point in the travel of the carriage without the operator leaving the platform.



Automatic Control with Alternating Current Is a Feature of This Plate Planer. Safety devices provide for quickly stopping the carriage should the current or the reversing mechanism fail

The planer is direct-connected to an automatic reversing 440-volt three-phase 60-cycle motor. The electrical equipment also includes a motor-operated brake which is used only as a safety attachment. The drum of the brake is keyed to an extension shaft on the main driving motor, and the entire mechanism is so arranged that should the current fail, the brake will automatically set itself, bringing the carriage to an almost instant stop. As an additional safety measure the carriage is also so equipped that if for any reason the reversing mechanism should fail, the carriage by coming in contact with a safety arrangement would break the current, causing the carriage to stop almost instantly. The electrical equipment also includes a stop and start push button which, should there be no objection to trailing wires, may be mounted on the carriage. These push buttons may also be mounted on one of the housings or at any other point that may be convenient.


Sheet No. _____

All prices subject to change without notice. All materials listed subject to prior sale.

BULLETIN OF AVAILABLE MACHINE TOOLS FOR SALE

Machine Tool Section, Office-Director of Sales
P. S. & T. DIV., War Dept., Washington, D. C.

IMPORTANT:-Prospective buyers are requested to communicate with the nearest Bureau and District Office.
See special sheet giving addresses of District Offices.

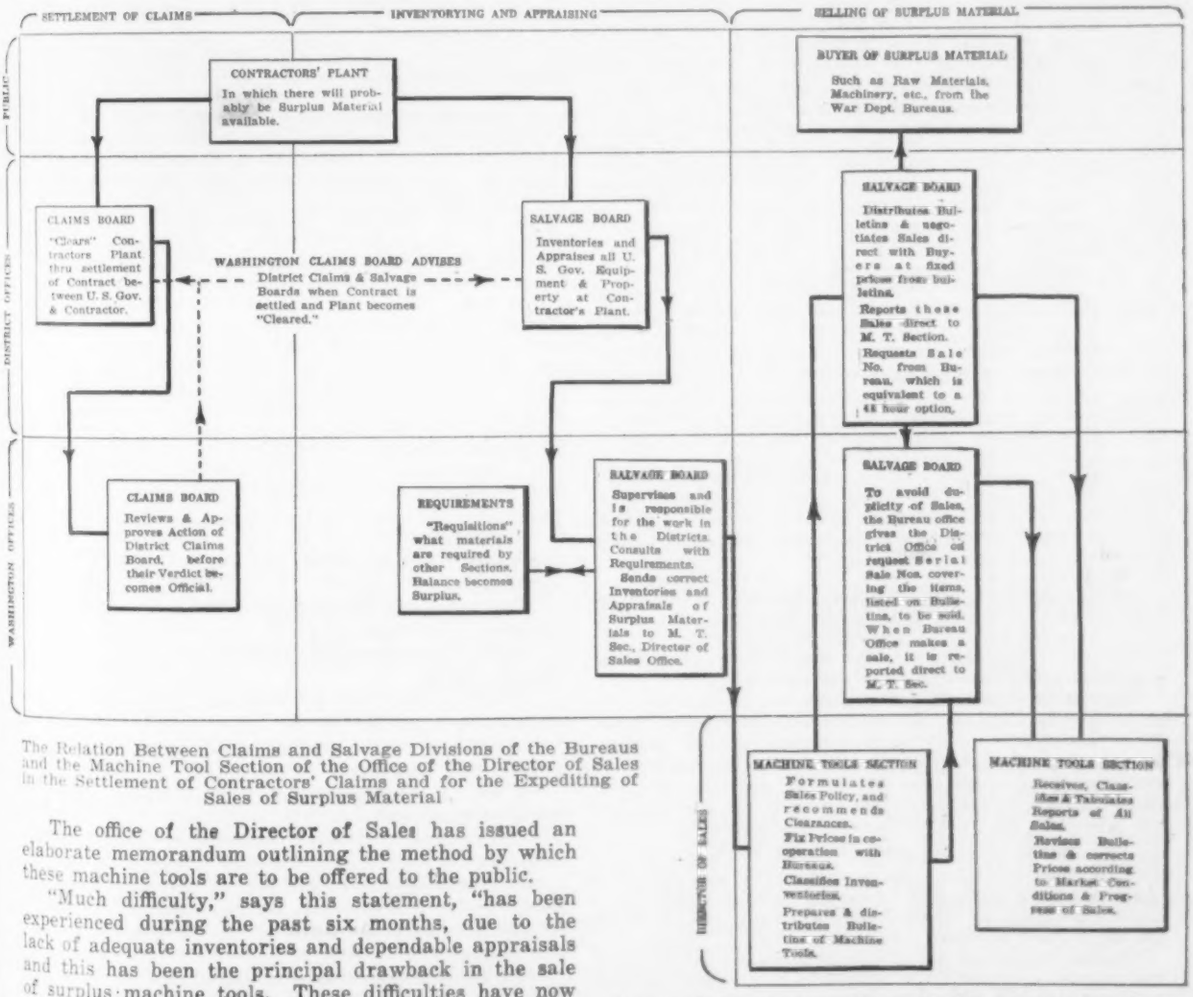
Dates Issued:

Quantity	Identifying Nos.	Remarks Attachments & Equipment	Location of Tool	Bureau & District	Service value	Present sales	Selling price, min.	Cost to U.S. Gov	Sold for	Sold by	Date Sale	Sold to

Fixing Prices of Government Machine Tools

How the Selling Prices Are Determined—Method and Conditions of Making Sales of Stocks of Standard Machines, Both Used and Unused

WASHINGTON, Aug. 5.—After eight months of organizing and planning the War Department has finally reached a point where its officials are actually making up an inventory of the surplus machine tools. Much of the delay has been caused by the lack of definite appraisement methods. This has now been solved by a series of charts. THE IRON AGE has already printed the chart to establish the service value of used machine tools. These are here again reproduced and now the series is completed by a chart to fix the minimum price at which these machine tools may be sold.


SETTLEMENT OF CLAIMS
INVENTORYING AND APPRAISING
SELLING OF SURPLUS MATERIAL
PUBLIC
DISTRICT OFFICES
WASHINGTON OFFICES
DIRECTOR OF SALES
CONTRACTORS' PLANT
In which there will probably be Surplus Material available.
BUYER OF SURPLUS MATERIAL
Such as Raw Materials, Machinery, etc., from the War Dept. Bureaus.
CLAIMS BOARD
"Clears" Contractors Plant thru settlement of Contract between U. S. Gov. & Contractor.
WASHINGTON CLAIMS BOARD ADVISES
District Claims & Salvage Boards when Contract is settled and Plant becomes "Cleared."
SALVAGE BOARD
Inventories and Appraises all U. S. Gov. Equipment & Property at Contractor's Plant.
SALVAGE BOARD
Distributes Bulletins & negotiates Sales direct with Buyers at fixed prices from bulletins.
Reports these Sales direct to M. T. Section.
Requests Sale No. from Bureau, which is equivalent to a 48 hour option.
CLAIMS BOARD
Reviews & Approves Action of District Claims Board, before their Verdict becomes Official.
REQUIREMENTS
"Requisitions" what materials are required by other Sections. Balance becomes Surplus.
SALVAGE BOARD
Supervises and Is responsible for the work in the Districts. Consults with Requirements.
Sends correct Inventories and Appraisals of Surplus Materials to M. T. Sec., Director of Sales Office.
SALVAGE BOARD
To avoid duplicity of Sales, the Bureau office gives the District Office on request Serial Sale Nos. covering the items, listed on Bulletins, to be sold. When Bureau Office makes a sale, it is reported direct to M. T. Sec.
MACHINE TOOLS SECTION
Formulates Sales Policy, and recommends Clearances.
Fix Prices in cooperation with Bureaus.
Classifies Inventories.
Prepares & distributes Bulletins of Machine Tools.
MACHINE TOOLS SECTION
Receives, Classifies & Tabulates Reports of All Sales.
Revises Bulletins & corrects Prices according to Market Conditions & Progress of Sales.

The Relation Between Claims and Salvage Divisions of the Bureaus and the Machine Tool Section of the Office of the Director of Sales in the Settlement of Contractors' Claims and for the Expediting of Sales of Surplus Material

The office of the Director of Sales has issued an elaborate memorandum outlining the method by which these machine tools are to be offered to the public.

"Much difficulty," says this statement, "has been experienced during the past six months, due to the lack of adequate inventories and dependable appraisals and this has been the principal drawback in the sale of surplus machine tools. These difficulties have now been largely overcome by the machine tool section of the Director of Sales office, which last February began a study of inventory system and appraisals methods which resulted in the evolution of the uniformly standard inventory system for use in all bureaus."

The following paragraphs of the statement deal with the method of inventorying, appraising and selling the surplus tools, and detail the use of the special chart and inventory blanks:

Considering the large quantity, different classes and types of machine tools to be appraised and the importance of the time element, it was not considered expedient to carry on appraising by the conventional three-man method as the time involved and cost should be prohibitive.

The work of appraising has been materially simplified by the separation of the service value from the money value and standardized through the introduction of a method for appraising by the graphical chart. This graphical chart is the result of an analysis of much technical data on appraising and a series of conferences with the representatives of the various bureaus, faculties of technical schools, prominent industrial engineers and the war readjustment committee of the American Society of Mechanical Engineers, and

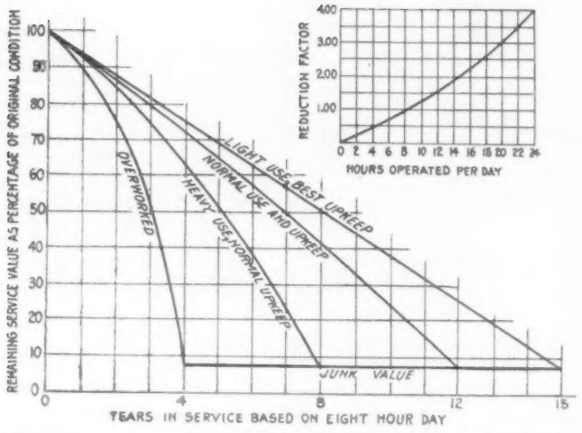

REMAINING SERVICE VALUE AS PERCENTAGE OF ORIGINAL CONDITION
REDUCTION FACTOR
HOURS OPERATED PER DAY
LIGHT USE, BEST UPKEEP
NORMAL USE AND UPKEEP
HEAVY USE, NORMAL UPKEEP
OVERWORKED
JUNK VALUE
YEARS IN SERVICE BASED ON EIGHT HOUR DAY

CHART FOR USE IN APPRAISAL OF STANDARD MACHINE TOOLS TO DETERMINE SERVICE VALUE

A. In using this chart ascertain from best sources, as completely as practicable, preferably from shop superintendents, foremen, U. S. inspectors or plant records, for each tool or group of tools:

1. Actual time of use in years.
2. Average number of hours per day in use.
3. Class of usage and upkeep (see curves).

B. Reduce the actual time of use (A1) to the equivalent standard 8-hr. day usage by the reduction factor obtained from small chart on the right.

C. Enter main chart below with equivalent years of use (B) on base line, read vertically to appropriate curve (A3), then horizontally to left for percentage of condition. This percentage is to be recorded on inventory card unless altered in accordance with paragraph following (D).

D. Examine the tool for evidences of:

1. Exceptionally good care, maintenance and operation above normal. If justified, the percentage derived under preceding paragraph (C) may be increased, but not to exceed five (5) per cent.
2. Abuse or exceptionally poor care, either in usage, upkeep, handling or storage, below normal. If justified, the percentage derived from preceding paragraph (C) may be decreased, but, in general, not more than ten (10) per cent. The use of the *overworked* curve will cover most cases.
3. Broken or missing standard parts or equipment. This can be taken care of by an appropriate reduction from the performance previously determined, unless cost of replacement can be estimated with reasonable accuracy, which is preferable.
4. The percentage determined by consideration under paragraph C, *as altered* under paragraph D, is to be entered on the inventory card and noted in "Remarks" with brief statement of reasons for the exercise of special action.

E. Original cost, market price, obsolescence, amortization and demand are not to be considered in using this chart, but as separate factors in price determination.

Example.—The machine was in use the equivalent of 6 yr. with *normal use* and *below normal* upkeep.

Method of Application.—Enter the chart along base line at 6. Follow vertically to "normal use and upkeep" curve. Read horizontally to left to 57 per cent. By use of judgment, under D2 it is determined that 5 per cent should be deducted; 57 per cent less 5 per cent gives 52 per cent. Entry on card, "Condition 52 per cent; in remarks, "Normal use, 5 per cent deducted for below normal upkeep."

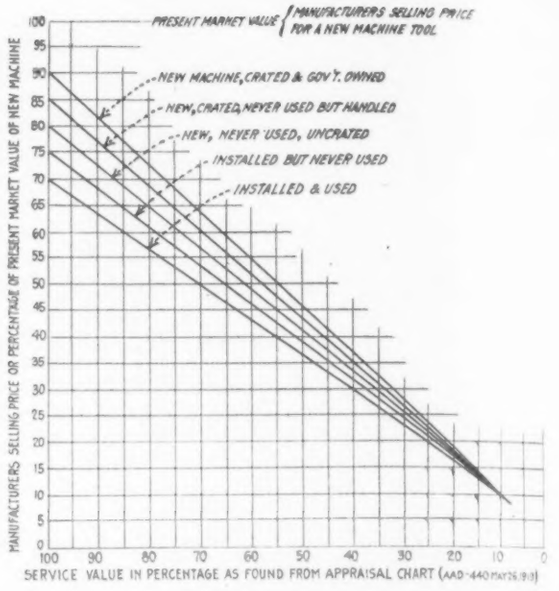
REDUCTION FACTOR—SMALL CHART TO RIGHT

This chart is to be used in conjunction with the main chart to obtain uniformity of results in those cases where shops have operated at other than 8 hr. per day, on which the main chart is based.

Having determined the number of hours per day at which the tool was operated (A2), read from this number on base line vertically to curve, then horizontally to the side for the reduction factor.

Example.—The machinery in the plant was operated for a period of 1½ yr. (A1) at 24 hr. per day (A2).

Method of Application.—From the chart the factor is found to be 4 for 24 hr. use. Multiply the period of actual use 1½ yr. by factor 4. Result 6, which is the equivalent number for years on 8 hr. usage and is the time to be used in reading the main chart.


PRESENT MARKET VALUE / MANUFACTURER'S SELLING PRICE FOR A NEW MACHINE TOOL
NEW MACHINE, CRATED & GOV'T. OWNED
NEW, CRATED, NEVER USED BUT HANDLED
NEW, NEVER USED, UNCRATED
INSTALLED BUT NEVER USED
INSTALLED & USED
MANUFACTURERS SELLING PRICE OR PERCENTAGE OF PRESENT MARKET VALUE OF NEW MACHINE
SERVICE VALUE IN PERCENTAGE AS FOUND FROM APPRAISAL CHART (AAD-440 Part 26, 9-9)

PRICE-FIXING CHART TO DETERMINE THE SELLING PRICE OF STANDARD MACHINE TOOLS

Showing the Minimum Selling Price without Obtaining Special Authority

A. In using this chart, ascertain present market price of a new machine tool of the same size and make and having the same equipment.

B. Obtain by use of chart in the adjoining column the condition of tool in percentage.

C. Refer to status of tool regarding crating, installation, etc., to determine which price line is to be used.

D. Enter chart on base line with the condition percentage as ascertained by B. Follow vertically to price line as ascertained by C. Then follow horizontally to the left margin and read price percentage.

E. Multiply this price percentage by the present market value of a similar new machine having the same equipment and the result will be the minimum selling price which may be accepted for a properly cleared surplus machine tool.

Example.—The graphical appraisal chart shows that a "normally used" machine at the end of 4 years has a service value of 72 per cent (B). Enter the price chart on the base line (D) at 72 per cent. Follow vertically to the price line (C) which in this case is taken as "Installed & Used"; then read horizontally to the left margin which gives the selling price as 51 per cent of the present market price. Assuming the present market price of a similar machine to be $1000 (A), multiply this $1000 by 51 per cent (D), which gives $510 as the minimum selling price.

the entire plan, as stated, has met with their combined approval.

The principal advantages in making appraisals by the graphical chart are:

Minimizing the possibilities of differences of opinion in appraising.

The time and cost of making appraisals has been reduced to a minimum.

Simplicity of the method enabled appraisals to be quickly and accurately made.

A uniformly dependable appraisal for all standard types of machine tools in all bureaus.

The inventorying and appraising of the Government property and equipment at the contractor's plant is done by the inventory section of the district salvage board under the direct supervision and control of the Washington salvage board of the bureau which placed the contract.

As these inventories and appraisals are completed they are forwarded to the Washington salvage board, and sent to the requirement section of the bureau which selects from these inventories any material that may be required at that particular time for use by other sections of the bureau.

The remainder then becomes surplus, and these inventories are forwarded direct to the machine tool section, office of the Director of Sales by the Wash-

ington salvage board (on P. S. & T. inventory forms 256-S).

The time in the taking of inventory and making of appraisals varies from a week to six weeks, and even longer, depending on the amount of Government material at the contractor's plant.

The time taken by the requirement section in making selections from these inventories has been very much drawn out, and this has seriously retarded the declaring of the material as surplus—which must be done before any material becomes available for sale.

The Selling of Surplus Machinery

The function of the machine tool section, office of the Director of Sales, is to formulate policies for the liquidation of Government surplus machine tools at fair prices to the Government, due consideration being given to industrial and labor conditions.

The machine tool section, upon receiving the inventories and appraisals of surplus machine tools from the Washington salvage boards of the several bureaus holding title to the machines, classifies and files these inventories as to class of machine, type, maker and size.

A loose-leaf bulletin of the available surplus machine tools is compiled from the files of these inventories at periodic intervals of 15 days and distributed to the Washington and district salvage boards of the several bureaus. Each sheet of this bulletin is devoted to a particular class, type, size and make of machine and all similar machines which become surplus are listed on this sheet, giving the quantity, identifying numbers, equipment, its location by plant, district and bureau the remaining service value of the machine, the selling price and the cost to the Government.

The minimum selling price is computed from a price-fixing chart based on the present market price, by the machine tool section, office of Director of Sales, cooperating with representatives of the several bureaus having surplus machine tools for sale.

The actual selling of the surplus machine tools is to be done by the district office of the bureau holding title to the machines and in the bureau district in which the prospective buyer is located.

Each district sales force is empowered to make sales on all materials listed on the bulletins that belong to their bureau even though these materials may be located in other districts.

When a district office is dealing with a prospective customer who is desirous of purchasing materials listed but owned by another bureau, that district office should immediately put the customer into communication with the proper bureau district office for the district in which the customer is located.

A notice is printed on all bulletins to the effect that (a) "all prices are subject to change without notice, and all material listed is subject to prior sale" and (b) "prospective customers are requested to communicate with the nearest district office as shown on the special sheet giving addresses of district offices."

A quantity of these special sheets will be printed and be available for distribution to the general public by the several Washington and district salvage boards.

An extensive publicity campaign will be carried on through the various trade journals which will give full information concerning the surplus machine tools available for sale as listed on these bulletins.

To avoid duplication of sales the district office negotiating a sale with a prospective buyer immediately requests their bureau office at Washington for a serial number covering the materials desired by their prospective buyer. The Washington bureau office, in granting this sales number, does so with the understanding that it is regarded as a 72-hr. option to the district office for their customer, and it is understood by the district office that the prospective sale for which they have requested a sales number must be consummated within the time limit of the option or the option expires and the material for which the sales number was requested is automatically released and the sales number cancelled.

The time limit of this option is to be considered as starting from the time at which the Washington bureau office grants the sales number and the option is subject to renewal only at the discretion of the Washington bureau office.

A sale is to be considered as consummated when the district office has the buyer's certified check covering the amount of sale in their possession before the expiration of the 72-hr. option. Immediately upon the consummation of a sale the district office is to notify the Washington bureau office by wire of the fact, and forward to them the buyer's certified check and all necessary sales papers, together with shipping instructions.

Each sale is to be noted on the bulletin sheet in the space provided for the data pertaining to the sale and one copy of this bulletin sheet is to be immediately sent direct to the machine tools section, office of the Director of Sales, Munitions Building, Washington.

These sales are to be further reported weekly by the Washington bureau office to the machine tools section, office of the Director of Sales, in the same manner as at present except that reports of sales of machine tools are to be kept separate.

Only the surplus machine tools listed on the bulletin sheets are to be considered as being finally cleared by the office of Director of Sales under blanket clearance No. 1591-C dated July 14, 1919, and available for disposal.

Machine tools and other materials not listed on the bulletin must be inventoried and appraised and cleared through the office of Director of Sales in the usual manner.

By this method each district office will receive periodically complete inventories as to the quantity, nature and selling price of all surplus machine tools available for sale. The Washington office of each bureau will be in a position to supervise the sales of its own surplus, and the machine tool section of the Director of Sales office is kept constantly informed as to the progress of the sales in all bureaus, and can thereby control the sale of surplus machine tools by making such revisions in the price-fixing chart as may become necessary.

The Price Fixing Chart

The use of this price-fixing chart is dependent on two things:

1. The present condition, i.e., the remaining service value as determined from the graphical appraisal chart (A. D., No. 440 O. S. B.).

2. The present market price of a new machine tool as determined from the manufacturers' net prices on file in the machine tool section, office Director of Sales.

Having ascertained the percentage condition of the machine tool from the graphical appraisal chart, enter the price fixing chart on the base line at the corresponding point. Now read vertically to the price line, which corresponds to the present status of the machine tool, such as "Installed and used," "New machine crated, etc." At the intersection with this line read over horizontally to the left and this will give the selling price in percentage of the present market value of a similar new machine.

Then ascertain the current manufacturers' selling price for a similar new machine tool from the files of the machine tool section of the Director of Sales office, and multiply this price by the percentage previously derived from the chart.

When a new machine has been in storage for less than a year no allowance is made for obsolescence, as the service value of the machine is considered to be 100 per cent, but when a new machine has been standing for more than one year its service value falls below 100 per cent and the exact percentage must be computed from the graphical appraisal chart using the "line—light use, best upkeep" for a new machine.

O. F. S.

The Krupp's of Germany are to build large factories at Apeldorn, Holland, according to *Le Luxembourgeois*. Plans are completed and ground has already been acquired.

Rapid progress is being made in erection of the new sintering plant of the Carnegie Steel Co., at Farrell, Pa. It is expected to be ready to start in September.

MACHINERY TRADE WITH ITALY

Good Prospects for Labor-Saving Machines—Import License Restrictions a Hindrance

The development of a market for American industrial machinery in Italy depends primarily upon the removal of the import embargo which has been placed upon such shipments into that country by the Italian Government since early this year, according to W. C. Marshall, who has returned to the United States after a three months' investigation of Italian manufacturing plants and centers in behalf of the United States Bureau of Foreign and Domestic Commerce. A permit is required to make such exports and it is stated that this is very difficult to secure, except where the particular type of machine in question is not being made at the present time in Italy.

A substantial increase of importation into this country from Italy he emphasized as a prerequisite to the removal of the unfavorable trade balance against Italy, which is the principal reason for maintaining the embargo. The necessity of having Italian agents in Italy rather than European agents working from headquarters located at London or Paris, and also the importance of carrying on correspondence in either Italian or French, he pointed to as two details germain to success in this field.

On account of the huge shipments of machine tools and Allied equipment during the war he states that sales of this class of equipment will for some time be restricted largely to replacement of tools as they wear out or to the installation of brand new types or models. The greatest opportunity in selling machinery in Italy, according to Mr. Marshall, is to be found in supplying machinery designed to replace handwork, for the reason that manual labor costs there have risen to a very high level during the war. Molders, for example, who received 8 lire a day before the war in a plant casting carwheels, now receive 20 lire; and machinists in a gun plant at Brescia, which employed 10,000 workmen during the war, are now paid up to 40 lire a day as compared with only 20 lire before the war.

Some of the principal lines in which conditions are favorable to American business are: Railway equipment tools, required to rehabilitate transportation lines which have been depleted or destroyed during the war. Ilva, Rome, is in need of such machinery for the manufacture of 4000 railway car axles. Plate planing and working machinery and other shipbuilding shop equipment, if it is not of high cost, are in demand; also excavating and dredging machinery, which is required in considerable quantities in connection with large port developments and improvements at Venice, Genoa and Naples; hemp-working and rope-making machinery (England now seeking to gain this market); textile machinery, if delivery is not too far off; bilge and other pumping equipment for steamships; metal-working machinery for bending and forming thin metal sheets; refrigerating machinery; paper-making machinery to be shipped in six months or one year from now; oil engines, in case Rumanian oil can again be secured.

On account of the extremely high cost of coal, equipment for its utilization is in very poor demand. Material-handling machinery is found in considerable quantities in the larger plants, about one-third of it being of German manufacture. There is very little equipment of the industrial truck or tractor type. The port developments, especially that at Venice, are expected to call for some larger orders for equipment of this type. The new port near Venice, which is being promoted by financiers and large manufacturers in connection with the Ministry of Public Works, is to be handled by an organization known as the Societa per Il Porto Industriale, and will be located at Marghera, near Nestre on the mainland. Complete cargo-handling and warehousing equipment are included in the plans. The following shipbuilding and metal-working companies are participants:

Societa Contieri Navali e Acciaerie de Venezia, Campo Monin, Venice (shipbuilder and steel founder).

Contiere della Societa Breda, Bottenighi, Mestre (Breda Shipbuilding Co., plans for yard to accommodate six 60,000-ton ships).

Contiere Navali della Societa Veneziana, S. Angelo, Corto dell' Albero, Venice (Venice Shipbuilding Co., also operates steel foundry).

Unione Italiana Coricimi, Bottenighi, Mestre (chemical fertilizer works).

Societa Italo Americana del Petrolio, S. M. del Giglio.

Societa Veneta de Costruzioni Meccaniche, S. Gioramie Decollato 1681, Venice (Machinery and foundry company).

New Italian Import Regulations

WASHINGTON, Aug. 5.—The Italian Government is planning to require special Treasury import licenses on all partly manufactured iron and steel products, rail material, agricultural machinery and automobiles, according to a statement given out by the Bureau of Foreign and Domestic Commerce. American hardware, machine tools and machinery for industrial plants are to be freely admitted. The lists are not official and are subject to revision.

Call Meeting to Standardize Invoices

The National Association of Purchasing Agents, through its standardization committee, which last year adopted a standard catalogue size, has issued a call for a meeting to be held at the Bellevue-Stratford Hotel, Philadelphia, Sept. 20, at 10 a. m., to consider the standardization of invoices and related documents. Sales managers, auditors, systematizers, credit men and purchasing agents are invited to attend, the call being extended to both individuals and associations, the committee desiring the co-operation of all who can supply information. It also is proposed to suggest standard forms for purchase orders, acknowledgements and notices of shipment.

The standardization committee of the Association is composed of the following: W. L. Chandler, chairman, Dodge Sales & Engineering Co., Mishawaka, Ind.; W. V. C. Bulkeley, Liberty Steel Products Co., Woolworth Building, New York; H. H. Meehan, A. B. Dick Co., Chicago, Ill.; A. Lockwood, Lumen Bearing Co., Buffalo, N. Y., and F. L. Kulow, Willard Storage Battery Co., Cleveland, Ohio.

Little Machinery Demand from South Africa

Machinery inquiries from South Africa will probably be small for some time according to J. Curthew Sanders, Stewart Sanders & Co., Inc., New York, recently arrived from Johannesburg. During the war difficulty in obtaining machinery led many companies to purchase rebuilt machines until the stocks of dealers there were practically exhausted. South African needs for machinery will probably be satisfied by British manufacturers, owing to the extent to which exchange rates make American products that much higher. The dismantling of English munitions plants is expected to provide some machinery needed. The situation as to common labor in this section is good, owing to most of the unskilled workers being native. There is a slight shortage in skilled labor, which is rapidly being filled by returning soldiers.

Electric Furnace Production in Germany

Following the occupation of the right bank of the Rhine and the separation of German Lorraine, Germany has lost important plants producing electric steel, according to *Le Luxembourgeois*. In Lorraine the Thyssen-Hagendange steel plant had two 8-ton Heroult electric furnaces and one of 20 tons. The Rombach plant had one 2-ton Heroult furnace. In the Saar basin the Röchling-Rodenhausen plant and the Stumm plant at Neunkirchen had each an 8-ton Nathusius electric furnace. It is estimated that the number of electric steel furnaces in Germany was 90 of which 10 lay in the occupied territory.

The production of electric steel rose from 131,597 metric tons in 1915 to 190,036 in 1916, to 219,700 tons in 1917 and to 265,472 tons in 1918.

EMPLOYEE COMMITTEES

New System Adopted Following Graton & Knight Mfg. Co. Strike

The strike of the employees of the Graton & Knight Mfg. Co., Worcester, Mass., manufacturer of leather belting and leather specialties, has been settled, and the more than 1500 men and women have returned to work. The employees now accept the offer made by the company at the beginning of the trouble—in fact, before any demand was made upon the company—of a 50-hr. week, time and a half for overtime and equal pay for men and women for the same work. The 50-hr. week carries the same wage as the former 55 hr. Women have always received the same pay as the men for equal production, but this proviso was put into the offer and agreement, nevertheless. Moreover, women's work must be limited to 48 hr. a week under the new Massachusetts law. Another feature of the agreement is that a committee consisting of one person from the company and one from the employees shall investigate conditions of wages and hours in other similar establishments in America, and should it be found that the average is more favorable to labor than the agreement now provides, changes will be made in the new schedule to conform to such findings. The company officials in effecting this settlement dealt with the employees, not as members of the International Leather Workers' Union, but through a committee representing not only the strikers, but the workers who did not go out.

The strike went into effect July 7 and the plant remained idle, excepting for the care of hides in process in the tannery, until July 29, when the doors were thrown open to those employees who wished to return to their jobs, and a considerable body of the strikers responded to the opportunity amid scenes of wild violence at the shop gates, wherein firearms were somewhat freely used. Many arrests resulted and jail sentences were imposed upon most of those whom the police took into custody. The strikers then held a mass meeting and upon the advice of their leaders submitted to the terms as originally offered.

The agreement, which is a verbal one, transcribed as a memorandum, contains interesting and in some ways novel methods for adjusting any future differences which may arise between workers and owners. Shop committees will be chosen, comprising what may be called the upper and lower boards. The plant will be divided into large departments for this purpose, seven in number as a beginning, and each department will have its committee of three representing the employees and three representing the company. The superior board will consist of nine members, seven of whom will be from the employees and two from the company. This body will act on all appeals from the findings of the lower boards, their function being to review each case in question and reach what would usually be the final decision. However, in case the upper board shall not be able to come to a satisfactory settlement of the case the agreement provides that a person from outside the plant, to be agreed upon by the interested parties, shall act in an advisory capacity, especially in the interpretation of the issues in relation to the agreement. This outside party shall be either a justice of the court, a clergyman or an educator connected with some Worcester county institution of learning, the idea being that he shall be neither a labor leader nor manufacturer nor other business man who might be charged with prejudice. Beyond this provision there is no pledge by either company or employees to submit issues to arbitration.

An important feature of the agreement is that the employee members of the boards shall be elected by the workers, the elections to be held in the plant itself, and that a secret Australian ballot shall be used and every employee be given the right to vote. No attempt at coercion by the company or by labor leaders will be possible. All candidates must be placed in nomination in advance of the election and their names posted in the works, that the employees may have opportunity for ample consideration before making their choice.

When the strike began close to 2000 persons were on the company's payroll, but with the plant running at full capacity, as during the war, the total of employees reaches 3500.

The Worcester Molders' Strike

The molders's strike at Worcester, Mass., continues to drag along, the foundries making progress all the time in filling the places of the strikers, which includes some training of men for the work. An interesting incident of the strike as the situation develops is an advertisement published locally, signed by the Coppus Engineering & Equipment Co., Frans H. C. Coppus, president, which reads:

On May 9 our employees were called out by the Molders' Union. A number of them were not members of the union, but obeyed the call because they were told that if they did not go out they could not work after the strike was settled in favor of the strikers, and some of them stayed out because of threats of bodily injury if they should go back.

Several of our former employees have stated since the strike started that they did not have any grievance and they were perfectly satisfied with their jobs and would not like to lose them. Every one of these men has lost during the strike several hundred dollars in wages, not through their own fault but through the work of agitators who have no interest in the city, its factories, or the employees. On the other hand, we have been put to all kinds of discomfort and inconvenience.

To prevent a recurrence of these things, and in order that free men in our employ cannot in future be intimidated by other employees, we will never again employ any man in our foundry who is subject to a call to quit work, regardless of whether he is satisfied with his working conditions or not.

We have no grievance against any of our former employees, but of course first of all we will protect our employees who have remained loyal to us and those men who have come to us since. As in the past we will continue to strive to make working conditions as ideal as possible. There will be no minimum or maximum wage, but industry, efficiency and initiative will, as formerly, be encouraged and adequately rewarded.

Streine Co. Makes Power Squaring Shears

The Streine Tool & Mfg. Co., New Bremen, Ohio, has recently put out three new box type power squaring shears. Style A machine is built for heavy work. The bed plate and the cutting bar are heavily ribbed and cross-ribbed. A self-adjusted cam operates the hold-down automatically and the motion of the machine is controlled by a positive clutch actuated by a foot treadle extending the entire length of the machine, so that it can be controlled from either end. The machine is built in nine different sizes for cutting soft steel 3/16 in. x 8 ft. to 10 gage x 14 ft. A full set of front, back, side and beveled gages is furnished with each machine.

The general construction of the styles E and K machines is along the same lines as for style A. Style E shears are for general factory use and are built in 16 sizes for cutting soft steel from 3/16 in. x 30 in. to 16 gage x 10 ft. Style K shears are for lighter gages, ranging from 10 gage x 30 in. to 20 gage x 10 ft. and lighter gages.

Illinois-Indiana Rate Fight

Hearings held here last week before an examiner of the Interstate Commerce Commission were of great interest to Illinois and Indiana shippers. The case, which has been pending for several months, was occasioned by a complaint on the part of Indiana shippers that Illinois intrastate rates are much lower than rates on freight moving wholly within the State of Indiana, or between Indiana and Illinois points. An increase in Illinois rates ranging from 50 to 400 per cent is asked. The advances, if granted, will mean increases of 15 per cent over existing basic intrastate rates on pig iron, billets and other heavy commodities.

PRICE FIXING PROPOSED

House Bill to Create War Trade Commission to Establish Maximum Prices

WASHINGTON, Aug. 4.—A price-fixing board with authority to specify maximum prices for iron and steel and a number of other basic commodities is created in a bill introduced in the House by Representative Huddleston of Alabama as one of the numerous contributions toward a solution of the high cost of living problem. His bill contemplates continuance of a price-fixing system for a period of five years after the war. It would be known as a war trade commission and would be composed of five members appointed by the President without confirmation by the Senate, to receive salaries of $5000. The measure follows out the scheme which he suggested in a vague way during an argument before the House Rules Committee in support of a resolution for an investigation of the coal situation.

The first two sections of the bill follow:

"Be it enacted, etc., That by reason of the recent existence of a state of war it is essential for the national security and defense for the restoration of peace and order to insure the equitable distribution and sale at reasonable prices of the necessaries of life and of other commodities and to prevent scarcity, monopolizations, injurious speculations, manipulations and controls affecting the supply, sale and distribution thereof.

"That all articles and commodities manufactured, produced, or sold to be used as food, clothing, feed stuffs, medicines, furniture and furnishings, building materials and supplies, tools, iron, steel, coal, coke, copper and the materials used in producing said articles and commodities, gas, electricity and transportation and dwellings and apartments let for hire, shall be deemed necessaries within the meaning of this act."

Provisions regarding fixing of prices follow:

"That said war-trade commission shall have authority to fix the maximum sale, use and service prices for necessaries; to adopt regulations for the distribution, transportation, sale, handling, and shortage of same and to license dealers, agents and other handlers thereof.

"That it shall be unlawful for any person to sell, offer for sale, deliver, or to make a charge for, directly or indirectly, any necessary at a price greater than the maximum price fixed thereon by the war-trade commission, or if no such maximum price has been fixed, at a price or charge greater than such necessary sold for or was charged therefor on Nov. 11, 1918; or to make any agreement, express or implied, with any dealer, producer or handler thereof to fix or increase the price of a necessity or to limit the production of same; or not being a producer thereof, to sell, deal in, handle, or transport any necessary after 15 days after the approval of this act without permission or license, general or special, from said war-trade commission.

"That it shall be unlawful for any person who has not produced the same to sell, exhibit for sale, or offer for sale any necessary without same being legibly marked in plain figures with the original cost to him and the sale price thereof, where such necessary is physically susceptible of being so marked or where same is not physically susceptible of being so marked, to refuse to inform any intended purchaser thereof of such cost and sale price."

Penalties provided in the bill include a fine of not more than $5000 or imprisonment for not more than five years or both.

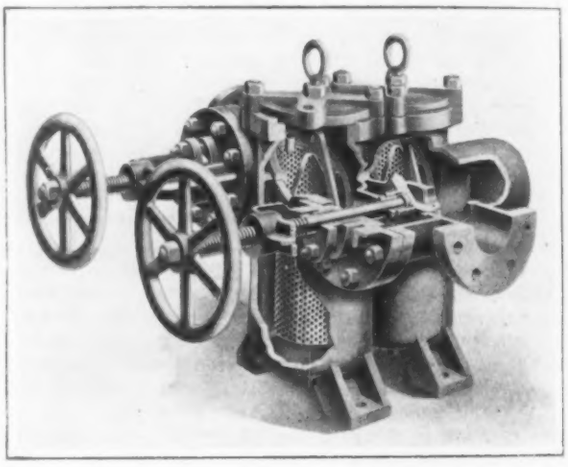
Discussing the reasons for such a radical step Representative Huddleston said:

"A glance through the columns of a daily paper is sufficient to show the causes for resentment against high prices. We have the exposure of the extortion of the packers' trust recently made by the Federal Trade Commission. Coal operators have advanced their prices beyond the maximum war prices and are threatening further increases. Flour has advanced $1.50 per barrel since the armistice was signed. The fever of extortion has run through the entire business world from the manufacturer, with his plant covering acres, down to the peddler, with his pushcart." O. F. S.

Strainer for Oil Systems

A duplex strainer, designed for installation in the suction or discharge lines of lubricating or fuel oil systems for the removal of solid foreign material in suspension, has been placed on the market by the Gris-Com-Russell Co., 90 West Street, New York. It is pointed out that such foreign material, if not removed, makes the lubrication inefficient and may seriously damage bearing surfaces. Similarly, sediment in fuel oil tends to clog the burners, reducing their capacity and necessitating frequent cleaning. It is stated that the device is also suitable for straining the water supply from such sources as rivers and lakes to prevent weeds, sticks, marine plants and small fish from entering the pipe lines.

The strainer consists of a cast iron body containing two perforated steel or brass baskets. The valve arrangement permits of the removal and cleaning of either basket while the other remains in service. In operation the oil or other liquid enters the inlet connection and passes into the basket in service. The solid matter remains in the basket, the clean liquid passing through the perforations and thence out of the strainer. All cast iron sections are cylindrical to give maximum strength. The valves can be reground.



Duplex Strainer for Removing Solid Matter in Suspension in Lubricating or Fuel Oil Systems

New Rolling Mill at Economy, Pa.

The Wyckoff Drawn Steel Co., 1103 First National Bank Building, Pittsburgh, has taken out a Pennsylvania charter with a capital of $500,000. The new company has secured a site of 12 acres at Economy, Pa., about 20 miles from Pittsburgh, on the Pennsylvania Lines West, on which it has started work on a new rolling mill to produce rounds, flats, squares, hexagons and special shapes, both in carbon and alloy steel, and also turned and drawn shafting. Most of the equipment will be designed by the company and all machinery will be motor driven. Contracts for electrical equipment and other machinery are yet to be placed. The new buildings will occupy about two acres. The officers of the company are: A. W. Wyckoff, president; G. R. Nutty, vice-president; P. M. Nutty, secretary and treasurer, and J. J. Komara, works manager. Mr. Komara has been chief engineer for seven years of the Columbia Steel & Shafting Co., Carnegie, Pa. The directors of the company are A. W. Wyckoff, G. R. Nutty, A. L. Humphrey, president of the Westinghouse Air Brake Co., and Union Switch & Signal Co., Pittsburgh; William McConway, Jr., president of the McConway-Torley Co., Pittsburgh, and George L. Schuyler, attorney. The product will be used entirely by the screw stock machine trade and automobile parts. The company expects to have its mill in operation by Jan. 1.

TOOL TRADE STRONG IN CANADA

Much Machinery Shows Hard War Usage—American Tools Advancing in Price

From a Canadian correspondent THE IRON AGE receives the following résumé of the machine-tool and supply situation in Canada:

Since the armistice was signed the machine-tool trade in Canada, like that of the United States, has been concerned over the disposition of the machines which were used for munitions work. Their appearance on the market has been awaited with expectancy by contemplating buyers, and even government purchasing departments have had dealers submit quotations on specifications for used tools. There have been a few cases where real bargains were secured.

Against the sales of used tools, where the buyers did well, is the fact that the majority of Canadian shell shops saw long, hard usage with operation at top speed for three shifts, seven days a week, which was continued month after month, mostly at the hands of unskilled operators. One firm in Montreal has recently equipped a shop especially for the rebuilding of this machinery. There has been no settled or definite policy among the dealers as to what they would do about used machinery, but the principals of one company made the suggestion many months ago that it would be good business to get together and come to some understanding as to how best to get the market into shape to absorb them. As things stand it seems that intending buyers have tried to arm themselves with second-hand tools in the endeavor to secure lower prices on new equipment.

It is only within the last two weeks that some buyers have come to realize that they have lost by waiting. United States principals, represented by Canadian dealers, have given notice of a 10 per cent increase in several lines. In fact, the selling price of good machine tools is a matter of uncertainty. Some dealers in Canada have been served with notices that, owing to uncertain labor and cost conditions, the makers of tools have practically withdrawn quotations.

The existing exchange rate works several ways. One is that it gives added protection to the Canadian maker of machines and supplies. Another is that it adds value to the stock of dealers who had been carrying a good sized line when the rate of exchange was not much over one per cent. The most noticeable change is in the attitude of many of the dealers. At first there was an attempt in some directions to absorb the exchange rate, but that time passed months ago. One Toronto house, with branches all over the country, has commenced stamping its letters to customers saying that the prices quoted on United States lines, from now on, will be the quotation plus the exchange on the day of shipment.

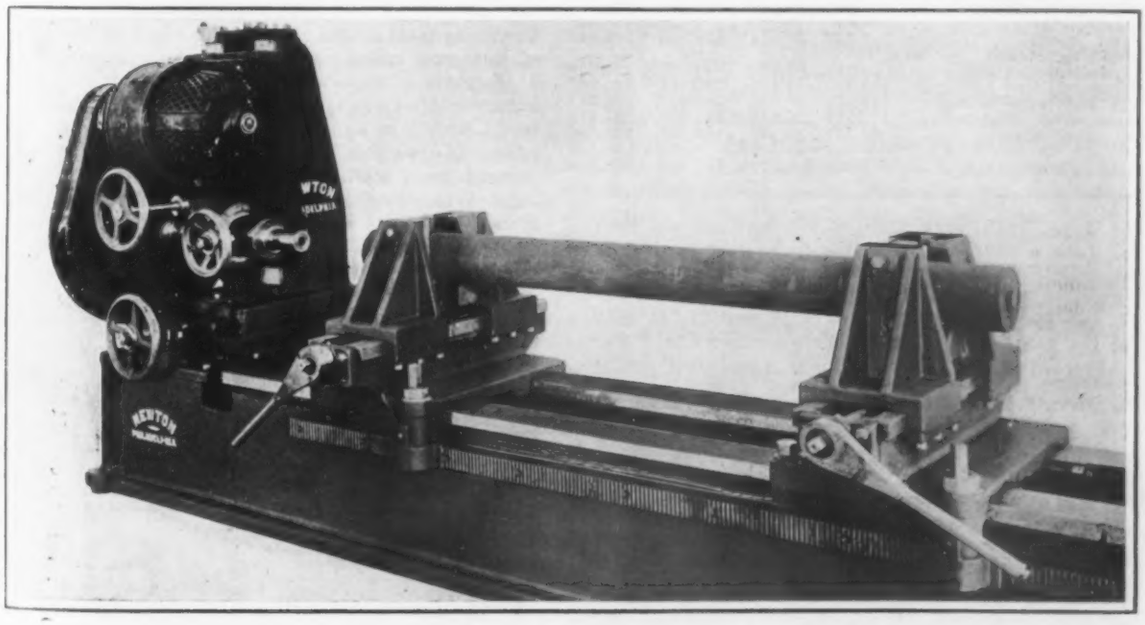
The return to work of the machinists of Toronto after their strike of twelve weeks is a good bit of news for the machine tool and supply business. Toolroom output was badly needed by firms that had turned to new lines. Much of the jig and fixture work has been going to United States points, while a good deal of foundry business has been sent from Ontario to Quebec where the strike did not get a start. There is a noticeable tendency on the part of the firms that were considering closing down for the rest of the season, owing to the long period of the strike, to make the best of the situation, and they are reopening their works. The machinists in Toronto drew some half-million in strike pay, and while doing so sacrificed well over a million and a half in wages, and failed in the vital points of the controversy.

With the resumption of the machine shop work there will be a quickening of the supply business and the demand for small tools. A reduction was announced this week in high speed cutters, of both United States and Canadian makes.

The National Railways are in the market for 1500 carbon drills, as well as for a smaller number of high speed. The automobile industry and the agricultural shops have been the most consistent customers since the signing of the armistice, but it is reasonable to suppose that, with the wear of daily operations, with work resuming in some 60 shops in Toronto alone, there will be a much better demand for taps, drills, reamers, cutters and similar lines.

Centering Machine for Rough Forgings

The centering machine illustrated is a recent development of the Newton Machine Tool Works, Philadelphia, for centering rough and irregular forgings. Two universal centering vises of the interlocking type are supplied with the machine. The jaws are adjustable by a screw giving a capacity for rounds from 2 to 12 in. in diameter and of any desired length. Vices are adjustable on the bed by rack and pinion.



Two Universal Centering Vises and an Adjustable Spindle Equip This Machine for Centering Irregular Forgings

The spindle is 3 in. in diameter, running in bronze bushed bearings, has 4-in. cross and 4-in. vertical adjustment with 8-in. hand feed. The cross and vertical adjustments are equally divided from the center line of the work. Alignment of all moveable parts is maintained by adjustable taper shoes. The drive is by a direct connected motor through a bronze driving gear.

June Exports of Iron and Steel, 544,580 Tons

Marked Increases in Pig Iron, Rails, Plates, Wrought Pipe and Structural Steel—Metal Working Machinery Double that of June, 1918

WASHINGTON, Aug. 5.—Although the exports of iron and steel in June, 1919, were more than 50 per cent beyond those for June, 1918, in value, the total for the fiscal year is $60,000,000 below that for a year ago. The June, 1919, increase is a part of the enormous increase of American exports which broke all records for that month by rising to a total of $918,000,000, more than $200,000,000 increase over previous figures for that month, for American commerce.

The export total of manufactures of iron and steel for June, 1919, was $129,985,703 against $83,306,173 for June a year ago. For the fiscal year ending June 30, 1919, the exports of manufactures of iron and steel amounted to $1,064,974,299 as compared with $133,746,188 for the fiscal year of 1917 and $1,124,999,211 for the fiscal year of 1918. This conforms to the general record of war commerce for iron and steel products.

Exports of Iron and Steel—Gross Tons

	June		Fiscal Year	
	1918 Gross Tons	1919 Gross Tons	1918 Gross Tons	1919 Gross Tons
Ferromanganese	345	130	4,935	2,184
Ferrosilicon	35	88	8,599	4,949
All other pig iron	22,516	39,540	363,478	335,279
Scrap	318	1,843	22,385	5,428
Bar iron	5,215	3,088	51,211	81,788
Wire rods	8,235	13,904	190,275	26,902
Steel bars	33,583	91,155	612,731	529,717
Billets, ingots and blooms, n.e.s.	139,377	46,016	1,970,831	911,695
Bolts and nuts	2,066	4,488	30,161	64,252
Hoops and bands	3,709	5,724	58,816	56,553
Horseshoes	160	220	9,089	2,498
Cut nails	514	172	5,209	3,468
Wire nails	5,470	11,440	109,380	93,898
All other nails, including tacks	1,023	2,276	13,139	18,406
Cast-iron pipes and fittings	2,867	4,737	79,205	40,042
Wrought iron pipes and fittings	8,795	36,421	102,014	173,252
Radiators and cast-iron house-heating boilers	250	407	2,874	3,577
Railroad spikes	1,049	4,343	15,549	20,749
Steel rails	25,069	67,028	430,347	621,728
Galvanized iron sheets and plates	7,730	14,345	79,618	86,113
All other iron sheets and plates	3,230	5,504	55,090	222,547
Steel plates	51,545	76,763	480,121	746,532
Steel sheets	12,766	20,954	176,820	160,432
Ship and tank plates, punched and shaped	3,354	1,732	34,951	20,598
Structural iron and steel	17,885	49,842	240,961	340,584
Tin and terne plates	30,558	19,660	251,827	244 302
Barb wire	22,922	10,932	184,874	197,392
All other wire	11,381	9,908	168,509	167,086
Total	421,967	544,580	5,752,999	5,181,951

Pig Iron, Rails and Structural Steel Show Large Gains

The exports of iron and steel which are reported in tons also showed a decided increase for June, rising to 544,580 gross tons, against 421,967 tons in June, 1918, and 447,050 tons in May, 1919. But the fiscal year figures were not up to the 1918 record, being 5,181,951 gross tons for 1919 and 5,752,999 tons for 1918. Much of the June increase over June, 1918, came under the head of pig iron, plates, steel rails, bars, wrought pipe and structural steel. In pig iron the total was 39,758 gross tons as against 22,896 tons in June, 1918. For the fiscal year the figures were 345,412 gross tons for 1919, against 377,012 in 1918.

There was an even more marked increase in the exportation of steel rails. These rose from 25,069 tons in June, 1918, to 67,028 tons in June, 1919. For the fiscal year the increase was from 430,437 gross tons in 1918 to 621,728 tons. France received almost the same total for June in both years—8668 gross tons in June, 1918, and 8397 tons in 1919. Mexico received none a year ago, but 2093 tons in June of this year, while Japan's portion increased from 1766 tons in June, 1918, to 12,689 tons in June, 1919. At the same time a new country was added to the lists—"Japanese China." That destination received no steel rails a year ago, but 12,115 gross tons in June, 1919.

The exportation of structural iron and steel jumped from 17,885 gross tons in June, 1918, to 49,842 tons in June, 1919. Much of this went to France, whose proportion increased from 779 tons a year ago to 21,440 tons in June of this year. For the fiscal year of 1918 the exports of structural iron and steel were 240,961 tons, and for the fiscal year 1919 they were 340,584 tons.

Steel plates increased from 51,545 tons in June, 1918, to 76,763 tons in June, 1919, and from 418,121 tons for the fiscal year of 1918 to 746,532 tons in 1919. For billets, ingots and blooms the figures fell from 133,917 tons for June, 1918, to 46,016 in June, 1919, while the fiscal year's figures dropped off more than a million tons, or from 1,970,831 tons in 1918 to 911,695 tons in 1919. This represents the discontinuance of shipments of shell steel.

Machinery Exports Much Increased

The exports of machinery more than doubled. In June, 1918, the valuation figures were $21,083,962, and in June, 1919, they had increased to $46,419,639. In May, 1919, they were $31,524,342. For the fiscal year 1918 the exports of machinery were valued at $288,273,034, and for the fiscal year 1919 they rose to $346,009,973.

The exports of metal-working machinery mounted from $4,419,779 in June, 1918, to $8,606,565 in June, 1919. For the fiscal years 1918 and 1919 the figures were almost identical—$58,327,668 in 1918 and $58,528,217 in 1919. In 1917 the same exports ran to the enormous total of $84,935,410, the result of war demand of European industries.

Exports of gasoline engines—not including finished automobiles—increased from $1,127,922 in June, 1918, to $3,228,865 in June, 1919, but the fiscal year figures remained practically the same. Steam engines increased from $867,926 in June, 1918, to $2,839,216 in June, 1919. For the fiscal year, however, they dropped from $38,935,928 (for the fiscal year ending June 30, 1918) to $29,430,326 in 1919.

Imports of Iron and Steel—Gross Tons

	June		Fiscal Year	
	1918 Gross Tons	1919 Gross Tons	1918 Gross Tons	1919 Gross Tons
Ferromanganese	5,739	1,800	33,259	24,006
Ferrosilicon	146	196	5,419	6,091
All other pig iron	....	5,688	16,098	10,036
Scrap	3,163	10,830	66,207	95,263
Bar iron	236	104	2,596	1,342
Structural iron and steel	154	170	7,281	2,453
Steel billets without alloys	1,757	27	36,131	21,821
All other steel billets	560	230	9,513	5,326
Steel rails	400	1,453	8,385	16,447
Sheets and plates	53	96	2,098	829
Tin and terne plates	....	21	32	70
Tin scrap	397	555	7,914	6,646
Wire rods	1,308	34	6,782	1,012
Total	13,913	21,204	201,715	191,352
Manganese, ore and oxide of	38,427	31,550	558,018	472,452

Exports of iron ore increased from 192,399 tons in June, 1918, to 207,434 tons in June, 1919, and from 1,185,769 tons for the fiscal year of 1918 to 1,356,602 tons in 1919.

Falling Off in Imports

On the import side there was a decline. For June, 1918, the imports of iron and steel totaled $2,770,168 and for June, 1919, they amounted to $1,590,488. The fiscal year showed a decrease. The totals were $28,-

Exports of Machinery

	June		Fiscal Year	
	1818	1919	1918	1919
Adding machines	$193,774	$415,386	$2,080,590	$3,417,958
Air-compressing machinery	267,039	575,870	1,808,979	3,668,688
Brewers' machinery	14,255	30,675	241,940	177,442
Cash registers	83,425	397,993	562,813	2,292,306
Parts of	4,930	46,885	63,821	203 243
Concrete mixers	29,591	18,606	315,539	245,708
Cotton gins	5,986	16,310	131,666	290,969
Cream separators	72,217	160,261	634,466	1,033,315
Elevators and elevator machinery	104,581	516,106	1,908,373	3,465,909
Electric locomotives	7,730	12,489	161,641	327,947
Gas engines, stationary	26,682	81 367	562,733	582,511
Gasoline engines	1,127,922	3,228,865	33,517,163	33,999,961
Kerosene engines	572.005	763,428	6,180,349	9 082,605
Steam engines	867,926	2,839,216	38,935,928	29,430,326
All other engines	184,901	892,161	3,576,537	5,477,668
Parts of	.....	.....	.....	.....
Boilers	445,828	618,653	3,806,302	5,844,071
Boiler tubes	437,297	1,363,770	6,411,439	9 472,284
All other parts of engines	3,528,662	4,823,600	22,032,637	28,695,085
Excavating machinery	111,344	138,455	1,240,259	1 097,932
Milling machinery, flour and grist	177,921	481,076	1,125,243	2,301,999
Laundry machinery, power	74,647	88,948	422,046	517,563
All other	10,089	48,946	289,590	362 100
Lawn mowers	10,963	95,539	234,216	433,614
Lathes	921,934	1,712,899	15,588,901	10,127 766
Other machine tools	793,138	1,209,067	11,119,147	12,837,464
Sharpening and grinding machines	572 030	555,113	6,564,277	6,144,229
All other metal working machinery	1,792,637	5,129,486	24,915,343	29,418,758
Meters, gas and water	47,121	96,690	477,615	671,871
Mining machinery, oil well	129,810	337,634	2,001,301	3,597,029
All other	468,671	1,078,802	10,171,409	9,562,751
Paper-mill machinery	138,539	852,784	1,911,622	3,191,442
Printing presses	113,660	418 512	1,343,853	2,654,001
Pumps and pumping machinery	497,618	1,092,261	6,554,188	7,484,606
Refrigerating and ice-making machinery	92,138	216,182	1,430,103	2,101 851
Road-making machinery	24 940	156,520	502,842	906,123
Sewing machines	**578,766**	**1,115,469**	7,793,718	11,592,768
Shoe machinery	**122,791**	**263,931**	1,519.641	2,053 540
Sugar-mill machinery	601,787	**745,311**	**11,760,246**	**10,132,593**
Textile machinery	572,808	1,792,839	5,505,148	11,492,052
Typesetting machines	185,116	399,289	1,304 977	3,233,783
Typewriting machines	575,696	1,888,022	7,480,714	11,988,363
Windmills	76,341	137,580	1,065 199	974,443
Wood-working machinery, saw mill	**59,809**	**134,860**	937,201	1,531,574
All other	147,796	433,089	1,022,052	1,761 205
All other machinery and parts of	3,175,101	8,998,694	41,053,287	60,190,557
Totals	$21.083,962	$46,419,639	$288,273,034	$346,009,973

031,026 in 1917, $25,071,077 in 1918, and $24,306,839 in 1919. The imports of iron ore fell from 58,528 gross tons in June, 1918, to 30,605 tons in June, 1919; the latter included 11,992 tons from Sweden. It represented, however, a reduction in Cuban and Canadian imports. The importation of pig iron showed a slight increase from 5885 tons in June, 1918, to 7684 tons in June, 1919; but a decrease for the fiscal year from 54,776 tons for 1918 to 40,333 tons in 1919. The imports of manganese ore and oxide of manganese fell from 38.427 tons in June, 1918, to 31,550 tons in June, 1919. For the fiscal year 1918 these imports were 558,018 tons, valued at $11,944,515; against 472,452 tons valued at $16,325,851 in 1919.

Government Offerings of Steel

The United States Ordnance Department Salvage Board offers through the New York office, 1107 Broadway, the following until 11 a. m., Aug. 15: At Singer Mfg. Co., Elizabethport, N. J., 8496 lb. forged steel, 1⅛ in. x 8 ft., 324,480 lb. ⅞ x ⅝ to 3⅝-in. diameter.

The St. Louis office, Missouri State Life Building, accepts bids until 10 a. m., Aug. 8, on the following lots at Wagner Electric Mfg. Co., St. Louis: 4902 partially completed 155-mm. common steel shells, 150 lb. each; 14,490 of 100 lb. each; 18,267 of 80 lb. each; 2207 partly completed 8-in. common steel shells of 175 lb. to 290 lb. each. At Curtis & Co. Mfg. Co., St. Louis, are about 1184 tons cast-steel ingots for 240-mm. shells.

The Detroit office, Book Building, offers for bids until 11 a. m., Aug. 8, at Detroit Shell Co., Detroit, about 43,973,725 lb. of 155-mm. shell forgings, bids accepted on 300-ton lots.

The Philadelphia office, 1710 Market Street, offers until 2.30 p. m., Aug. 11, at Hale & Kilburn Corporation, Eighteenth Street and Lehigh Avenue, Philadelphia, the following: About 1557 sheets manganese steel of varying sizes; at United States Eddystone Rifle Storage Arsenal, Eddystone, Pa., about 460 net tons round bar stock, 1 1/32 in. x 15 ft. long.

The Bridgeport office, Liberty Building, will open bids 1.30 p. m., Aug. 12, on the following at Remington Arms Works, Bridgeport, Conn.: About 1,497,260 lb. special chrome steel, ¾ x ⅝ in. x 15 ft.; about 636,154 lb. gun steel, ½ x ½ in. x 12 ft. and ⅞ x ⅞ in. x 15 ft.; about 93,265 lb. gun steel, 0.375 in. diameter x 12 ft. and 29/64 in. x 12 ft.; about 3,734,606 lb. low phosphorus steel forgings for 75-mm. shells at Wire Wheel Corporation, East Springfield, Mass.

Sealed bids will be received by the Boston district ordnance office, 19 Portland Street, on the following steel material: By 12 o'clock noon, Aug. 11, 180 tons of 2⅞-in. round cold-rolled steel, located at the Framingham Screw Works, Framingham, Mass.; 25 tons in five lots steel components for hand grenades, at Gorham Mfg. Co., Phillipsdale, R. I.; 50 tons of malleable iron grenade bodies at the Gorham company; by noon, Aug. 13, 11,132 net tons of 6 7/16-in. diagonal Gothic section steel blooms at the Mead Morrison Mfg. Co., Gloucester, Mass.; by noon, Aug. 14, 440 tons of cold-drawn Bessemer screw stock of 1½-in. diameter, at Sterling Motor Car Co., Brockton, Mass.; by noon, Aug. 15, 24 tons of steel for bacon cans, at William B. Durgin Co., Concord, N. H.; 200 tons adapters made from 2⅜-in. round screw stock, at Worcester Ordnance Storage Plant No. 2, Worcester, Mass.

The Bridgeport, Conn., district salvage board, 945 Main Street, is offering, among others, the following steel, sealed proposals to be in by 1.30 p.m., Aug. 12: 748 tons of special chrome steel, 363 tons of gun steel, 42 tons of 2 in. round steel bars, 18 tons of sheet steel, 70 tons low phosphorus steel shell forgings, and 32 tons cold rolled steel in coils.

Government Machinery Sales

The Bridgeport District Salvage Board is inviting sealed proposals, to be in by Aug. 12, for used machinery, comprising 45 grinders, 15 lathes, 15 milling machines, 3 profilers, 1 centering machine, 1 radial drill, 1 drill press, and other equipment. The Boston office of the ordnance department is offering a Reed Prentice heavy duty lathe at 122 Gold Street, Worcester, Mass., bids to be in by noon Aug. 13.

The Unity Mfg. Co., Chicago, is now located at 224 North Halstead Street, where it has a considerably increased equipment for tools, dies, automatic and hand screw machine work and general machining.

OVERSEAS SURPLUS MATERIAL

Slow Disposition at Low Prices—Reorganization Under Way—Total Unsold

WASHINGTON, Aug. 5.—Delays in the overseas disposition of the enormous stocks held by the War Department in Europe has resulted in an order to Assistant Secretary of War Crowell, Director of Munitions, to return to Europe immediately to expedite these sales. For five months a special liquidation commission, headed by Judge E. B. Parker, has been trying to sell the supplies and equipment in France to the French Government. No definite information has been received concerning the price which he is receiving, but the latest cable advices to the War Department indicate that he has negotiated a sale at a serious reduction in price. At that, the negotiations are still subject to approval by the Chamber of Deputies.

At the same time, C. W. Hare, Director of Sales, is in Paris organizing a special bureau to sell in Europe some of the surplus machinery and equipment now in the United States, on the lists of the department. So far, he has only reported the creation of his organization, but has submitted no detail concerning any progress he may be making. Mr. Crowell will confer with both Judge Parker and Mr. Hare in an endeavor to expedite the long delayed sales, and at the same time to secure some first hand information concerning the low prices which have been discussed in the newspaper dispatches. The return of Mr. Crowell at this time caused considerable surprise as it has been less than two weeks since he returned from England, after a long investigation of the same problems which he is now to reinvestigate.

The War Department has also announced that Maj. Gen. Charles G. Dawes, purchasing agent for the American Expeditionary Forces in Europe, is returning to the United States with the purchase records of the overseas forces. This will help to shed much light on the values of the surplus we hold in France and elsewhere, and probably will figure vitally in the decision which Secretary Baker must reach when it comes to approving any sacrifice sale of our overseas surplus.

General Dawes' return has resulted in a general reorganization of the liquidation commission, which now consists only of Judge Parker, former Senator Hollis of New Hampshire and Colonel Graham of General Pershing's staff.

The statistical announcement of the War Department concerning the surplus property available for sale July 1, in the hands of the surplus property division, lists $3,720,548 worth of machinery and engineering materials and $3,579,229 worth of motors and vehicles. The total valuation of all property available for sale is $233,899,197, of which $132,137,700 represents subsistence.

The department is completing new inventories of all surplus on hand in this country and abroad in an endeavor to hasten the disposition. These inventories were promised for early this week, but there have been new delays and no date is now set for their publication.

O. F. S.

Dwindling Steel Plant Profits

YOUNGSTOWN, OHIO, Aug. 5.—Replying to statements that the steel industry is earning exorbitant profits, President James A. Campbell of the Youngstown Sheet & Tube Co., Youngstown, issued the following statement:

"Last December these prices were reduced $5 per ton by the leading producers, and in March of this year they were again reduced $7 per ton, making a total reduction of $12 per ton from the prices that prevailed during the war period. Costs have not been reduced during this time but rather have been increased, owing to the overhead expenses, which continued heavy during the months in which the mills were operated at only 40 to 60 per cent of capacity.

"During the first six months of the year none of the steel companies was prosperous. Very few of those which have already published their reports have earned enough in excess of operating expenses to pay their dividends, which have been greatly reduced from those paid during the previous year. In fact, the Republic Iron & Steel Co. and the Lackawanna Steel Co., whose reports have recently been made public, both show a deficit. I am sufficiently informed about the earnings of other steel companies to know that some of them are only breaking even, while others are not even earning their regular dividends."

President Thomas J. Bray states the Republic Iron & Steel Co. earned during the last six months its preferred dividend requirements plus something less than 6 per cent on its common stock. "Various other steel companies have made about the same or less profit during the same period," says Mr. Bray.

Lunkenheimer Co. to Treble Facilities

The Lunkenheimer Co., Cincinnati, manufacturer of valves and engineering appliances, has announced its intention to increase and improve its manufacturing facilities by building a complete new plant. The site selected for the undertaking comprises about 70 acres of land in Carthage, a suburb of Cincinnati, on the Toledo division of the Baltimore & Ohio Southwestern Railroad. The location selected is not far distant from the center of the city, and is in the heart of a manufacturing section where labor is plentiful and facilities for the handling of incoming and outgoing freight are good.

Plans for the erection of the new buildings are being prepared and it is expected that work on the new structures will be started within the next few months. The buildings will be of the one, two and three-story types, of steel and concrete construction, and there will be provided all modern devices for the manufacture, handling, and transportation of raw materials, part finished and finished products. The undertaking will represent an outlay of approximately $2,000,000.

The welfare of the employees has been given special consideration. A piece of land of about 8 acres, lying directly opposite the land upon which the main plant is to be located, has been reserved as a recreation center, upon which will be erected an assembly hall, club rooms, baseball grounds, tennis courts, swimming pool, etc. Upon this site will also be erected a dining room capable of accommodating 1000 employees at one time.

The Lunkenheimer Co. moved to its present location in North Fairmount, Cincinnati, about 1900, the plant then comprising two manufacturing buildings, since when many additional buildings have been erected. Having outgrown its present plant, and there being no more property available in the North Fairmount section, the company determined that the best plan was to acquire acreage property, with a view to providing for the future, as well as present, necessary expansion. The new plant, when completed, will contain about three times as much floor space as now used by the company.

Truscon's Japan Plant

The first car carrying material for the plant of the Truscon Steel Co., Youngstown, in Japan left during the week for the Pacific Coast. Steel for the works is being fabricated in the parent plant in that city. The Japanese branch will be built on the national road between Tokio and Yokohama, to manufacture Truscon specialties for Japan and the far east. In construction a special design will be followed out to resist earthquake jars. The Japanese plant will be 120 x 500 ft. in dimensions, erected on a six-acre site. F. W. Shackleton, who was a captain in the United States Army during the war, will be in charge and has already sailed for his destination.

The Mississippi Valley Exposition will be held at St. Louis, Oct. 27 to Nov. 8. It is planned that each State shall have an exhibit of its resources and that all manufacturing enterprises in the valley will be invited to exhibit their products. Robert L. Burch, Exposition Building, is managing director.

GOVERNMENT MANUFACTURING

Arsenals Engaged "Tentatively" on Orders for Various Government Departments

WASHINGTON, Aug. 5.—The War Department has undertaken "tentatively" a most important departure in Government manufacture. To maintain the existing organization of the army at the various arsenals, the department is manufacturing items for other departments of the Government.

War Department officials are careful to explain that this is only a tentative measure, which, if it proves successful, they expect to incorporate into a permanent Government policy. So far, the entire matter had been carefully kept secret, but the following paragraph was inadvertently published in an official statement concerning the disposition of cancelled and suspended War Department contracts:

> Within the past few weeks, orders have been secured for the Ordnance arsenals from the various Government departments to the amount of $1,183,000. By means of such orders a substantial part of the excellent organization built up by the arsenals during the temporary emergency may be preserved during peace times as a means of military preparedness.

This interesting item brought to light the fact that these operations had been going on for some time on the initiative of the employees at a part of the War Department arsenals. It seems that when the department, last December, began to demobilize these arsenals, the workers sent representatives to the department to urge that work be found to keep these arsenals in operation. They finally received permission to form the organization of "Employees Representatives, Arsenal Branch, Ordnance Bureau." This organization immediately got in touch with other departments of the Government and finally secured a series of contracts for Government supplies.

Details of these contracts, except for the statement of the amount involved, have not been made public. It is explained, however, that they are only at the beginning of this work, and the "employees' representatives" have been busy securing promises for other work from other departments. If it proves feasible there is likelihood that these Government plants will be a source of competition with private firms in a number of industries. Although the question has been raised as to the statutory right of one department of the Government to do such work for another department, this question has been brushed aside by the War Department officials.

The possibility of the Government losing money on such operations apparently has not been considered. It is declared that the Government arsenals are not favored above private bidders for any kind of work, and must bid in the open market for such contracts as they have been able to secure. As an explanation of the War Department's course, it is declared that at many of the arsenals the workers were induced to take wartime positions at wartime prices on promises of permanent work by the "recruiting agents." These employees are now protesting against being compelled to move their families away from the skeletonized arsenals. At the same time, the officials say, there is an important war advantage in maintaining the skeletonized arsenals even if "peace" work must be substituted for war work in the output of the plants. The announcement that the War Department is engaged in the manufacture of supplies for other departments of the Government, coupled with the likelihood that these will be extended into permanent Government operations is of the highest importance to every industry. It is probable, therefore, that considerable inquiry will be made presently into the exact operations of the new plans.

O. F. S.

Sixty-two American Cargo Liners

WASHINGTON, July 28—Sixty-two regular cargo liner services have been established on various trade routes by the Shipping Board. Flying the American flag on these ocean highways are 174 vessels of 1,351,305 deadweight tons; 655 other ships engaged in general cargo and tramp service bring the total tonnage engaged in general commerce of the seas up to 4,248,973. This does not include more than 2,500,000 tons of shipping controlled by the Shipping Board which is still in war service for the Army and Navy and in overseas civilian food relief work. As additional ships are released from their war tasks, other trade routes will be opened.

The schedule of regular cargo liner services follows:

To Argentina from New York, Mobile, Ala., Boston, New Orleans, Wilmington, N. C., Charleston, S. C., Savannah, Ga., Brunswick, Ga. and from Jacksonville, Fla. From New York to North Brazil. From New York and Wilmington to Rio and Santos, Brazil.

From New York to Dutch East Indies. From New York to Bombay and other Indian ports. From New York to Spain. From New York to Danzig. From New York to Constantinople.

From New York to West Africa. From New York to South Africa. From New York to Melbourne, Australia. From New York and San Francisco to China and Japan. From San Francisco to Eastern ports and Europe.

From New York and Baltimore to Genoa. From New York to Grecian ports.

From New York, Philadelphia, Baltimore and Norfolk, Va., to London.

From New York, Boston, Philadelphia, Baltimore, Norfolk, Va. and Galveston, Tex., to Liverpool. From New York to Glasgow.

From New York to Havre. From New York, Boston and Baltimore to Bordeaux. From New York to Marseilles.

From New York, Boston, Philadelphia and Baltimore to Antwerp. From New York and Philadelphia to Rotterdam. From New York to Copenhagen and Gothenburg.

From Wilmington, N. C., Charleston, S. C., Savannah, Brunswick, Ga., and Jacksonville, Fla., to West Indian ports.

Adjustment of Steel Freight Rates from Huntington, W. Va.

WASHINGTON, Aug. 5.—The Interstate Commerce Commission has ordered the Railroad Administration to revise its rates on iron and steel rails and cross-ties in carloads from Huntington, W. Va., to certain points in Buffalo-Pittsburgh and central freight association territories on the ground that they are unduly prejudicial to Huntington and unduly preferential of Pittsburgh, and Johnstown, Pa., Newark, Ohio, and Cumberland, Md.

The action was taken on the complaint of the West Virginia Rail Co., which manufactures at Huntington light steel rails used in coal mines and industrial plants. Its raw material consists of old steel rails discarded by railroads and "seconds, culls and crop ends" obtained from standard rail mills, which are reduced by rerolling to the light rail.

"Defendants," says the decision, "will be expected to remove the undue prejudice, and it appears to be agreed that this may be done by establishing rates from the several producing points representing equal percentages of the corresponding sixth-class rates therefrom. We express no opinion as to what those percentages should be. If the undue prejudice found to exist is not removed by the defendants within 60 days from the date of service of this report, the matter may be brought to our attention for appropriate action."

The Granite City Steel Works, Granite City, Ill., resumed operations, July 28, after a shutdown of six weeks. The company is an adjunct of the National Enameling & Smelting Co.

ESTABLISHED 1885

THE IRON AGE

EDITORS:

A. I. FINDLEY WILLIAM W. MACON GEORGE SMART

CHARLES S. BAUR, *Advertising Manager*

Member of the Audit Bureau of Circulations and of Associated Business Papers, Inc.

Published Every Thursday by the IRON AGE PUBLISHING CO., 239 West 39th Street, New York

W. H. Taylor, *President and Treasurer* Fritz J. Frank, *Vice-President* George H. Griffiths, *Secretary*

Owned by the United Publishers Corporation, 243 West 39th Street, New York. H. M. Swetland, *Pres.* Chas. G. Phillips, *Vice-Pres.* W. H. Taylor, *Treas.* A. C. Pearson, *Secy.*

BRANCH OFFICES—Chicago: Otis Building. Pittsburgh: Park Building. Boston: Equitable Building. Philadelphia: Real Estate Trust Building. Cleveland: Guardian Building. Cincinnati: Mercantile Library Building. Washington: 613 Fifteenth Street, N. W. San Francisco: 320 Market Street.

Subscription Price: United States and Possessions, Mexico, Cuba, Shanghai, $5.00; Canada, $7.50; Foreign, $10.00 per year. Single copy, 25 cents.

Entered as second class matter, June 18, 1879, at the Post Office at New York, New York, under the Act of March 3, 1879

Union Leaders' Defiance

There is something unmistakably German about the demands the heads of railroad unions have been letting loose at Washington in the past week. No matter what becomes of the railroads, or of all industry, or of the people in the United States who are not employed at railroad work, the members of the railroad labor unions are going to have their way. Questions of right or justice have nothing to do with the case. Should Congress dare to enact into law the proposal of Director-General Hines for a special commission to deal with railroad wages so that a fair award may be made, "we will tie the railroads up so tight they will never run again." So threatens the head of the railroad department of the American Federation of Labor.

Such talk stamps its author as a man who never did anything more dangerous than to make reckless use of his organs of speech. But along with his wild words we have the four brotherhood chiefs who have demanded the retirement of private capital from railroad operation and the substitution of a tripartite control of railroads by the public, the operating management and the employees, an interpretation of the unions' program, which is more enlightening as to the ultimate aim of the stand-and-deliver tactics started at Washington. The proposal, we are told, "marks the step by which organized labor passes from the demands for wage increases to demands that the system of profits in industry be overhauled." Meanwhile, however, the demands for wage increases are the uppermost consideration, even though, as in the case of the striking shopmen, the strikes and the resulting tie-ups of industry are in defiance of the orders of union officers.

Ever since the armistice it has been plain that labor demands constituted the chief uncertainty as to the future of the country's industry. Far above the problem of employing returning soldiers, or that of trade relations with allied or lately enemy countries, or even of the rising scale of prices due to world-wide credit and currency inflation and to labor's limited performance, has loomed up the possibility of stopping the industrial machine by the arbitrary action of organized labor. For a small fraction of the workers of the country to say to the public that whatever loss or suffering may come to the people through the suspension of transportation, the railroad unions propose to have their way, is as close an approach to the highwayman method as we have had since the Adamson bill was put through while Congress stood with hands up. That surrender is very largely responsible for the peremptory demand that now threatens interruption to industry all over the country.

The issue raised should be very distinctly separated from that of the high cost of food and all else that enters into living expense. Apart from all considerations of the responsibility for increasing prices, the fact is that even though much belated, a serious effort is being made at Washington to find a way to cheapen food; and some relief is likely, though for reasons often given it cannot be considerable in the near future. But seeing that such an effort is being made, the union leaders have made a serious mistake in forcing their ulterior issue to the front. To say that they "will not brook" the return of the railroads to their owners is mere bluster, in view of the preponderance of sentiment for such return. On that issue the union leaders are plainly riding for a fall.

Heavy Production of Plates

In no branch of the steel industry was there greater striving for output during the war than in plates suitable for shipbuilding. Many will recall the dinner of the American Iron and Steel Institute held in the evening of May 25, 1917, when General Goethals declared the wooden ship program impractical, stated that President Farrell of the Steel Corporation had assured him that the steel industry could and would furnish plates for building steel ships, and expressed the opinion that the Shipping Board would be put in position to build 3,000,000 tons deadweight of steel ships in 18 months. Although a great deal of time was lost by the wood vs. steel ship controversy that followed General Goethals's declaration, the actual performance did not fall far short of his forecast, and so far as plates were con-

cerned there was always an ample supply except in cases produced by inefficient distribution.

The remarkable increase that occurred in plates of the class used for shipbuilding is shown by the general statistics of rolled iron and steel production in 1918, given in THE IRON AGE one week ago. As 1913 was the first year for which plate and sheet statistics were compiled in the present form (the separation previously having been incomplete), and was the last year before the war, the comparison of the two years is particularly interesting, as follows, the production being almost entirely of steel:

	Gross Tons	
Universal plates:	1913	1918
¼ inch and over	1,110,074	1,203,664
Under ¼ inch	48,342	31,118
Total universal	1,158,416	1,234,782
Sheared plates:		
¼ inch and over	1,432,254	3,445,284
Under ¼ inch	412,100	439,842
Total sheared	1,844,354	3,885,126
Sheets:		
12 gage and heavier	252,337	405,563
13 gage and lighter	1,464,631	1,668,076
Total sheets	1,716,968	2,073,639
Tin mill product:		
For tinning	827,266	1,502,690
For other use	204,033	102,898
Total tin mill	1,031,299	1,605,588
Total plates	3,002,770	5,119,908
Total sheets	2,748,267	3,679,227
Grand total	5,751,037	8,799,135

Except for a moderate tonnage of universal mill plates used in building composite ships, the supply of plates for shipbuilding was drawn almost entirely from the category of sheared plates ¼-inch and heavier. The output of that description increased by 2,013,030 tons, or by 141 per cent. There was practically no heavier production in 1915 than in 1913, and only a moderate gain in 1916; the chief increase occurred after the Shipping Board's shipbuilding program was put into operation. General Goethals's program of building 3,000,000 tons deadweight of steel ships in 18 months, or to the end of 1918, would have required the supply of not more than 600,000 to 700,000 gross tons of ship plates during the twelvemonth in which the plates would have to be shipped from mill, and thus it is obvious that there was a large production of plates from which to draw the requisite tonnage.

The production in 1918, however, was not the true measure of the plate rolling capacity that was available at the end of 1918, as several plate mills were completed very late in the year. The capacity in sheared plates, ¼-inch and heavier, was easily in excess of 4,000,000 gross tons a year at the end of 1918, this comparing with an output of 1,432,254 tons in 1913 and a capacity for that year in the neighborhood of 1,600,000 tons. The productive capacity has been multiplied about two and one-half times.

There was no disposition during the war to build universal plate mills, while one or two such mills were altered for producing sheared plates, yet from 1913 to 1918 the production of universal mill plates increased by 7 per cent.

Somewhat the same condition obtained as to sheets. There were some sheet mill extensions and a few new plants were built just before the United States entered the war, but from 1913 to 1918 the sheet production increased by 21 per cent. During 1918 operations of sheet mills were greatly restricted through shortage in steel supply, and thus the present capacity is evidently greatly in excess of the 1913 production.

The output of tin mill products other than for making tin plate was naturally light in 1918, as little such material was needed for war purposes, and the regulations greatly restricted its consumption. The production was cut in half from 1913 to 1918. The production of black plate for tinning, on the other hand, increased 82 per cent. The year 1913, however, had been an off year in the tin plate industry. The gain from 1912 to 1918 was 53 per cent.

A British View on Machine Tools

Writing in London *Engineering*, Joseph Horner tells the British manufacturers of the engineering trades that if they are to maintain a place for their products at home and abroad they must throw aside all methods of production which are not abreast of the times, and in so doing must equip their works with modern machine tools. His words apply with equal force to many American plants, not only in the metal lines, but in industries where the machine shop is merely an auxiliary, usually for repairs, and occasionally for the manufacture of special equipment used in the establishment. He points out to his British readers that the coming few years will be a period of extraordinary competition, probably as severe as ever was known, and one in which the ability of a machine to produce a maximum for its class is more imperative than ever, because it must do its share in offsetting the great advance in cost of labor and materials. The movement in Great Britain towards modernizing industrial works, a movement highly stimulated by the lessons in manufacturing learned during the war in munition production, is taking form in every industry. In the engineering trades the effort should mean a large buying of American machine tools. Of this need in Great Britain Mr. Horner says:

> The great problem of industrial reconstruction that lies immediately ahead can only be solved by increased machine production. This is the central factor—the one of first importance. Governments may hinder, or conceivably help, but the people themselves must settle down to the dogged task of increasing output. Nations who fail to understand and to act thus will inevitably be outdistanced by more virile peoples. This problem, as it confronts the captains of the engineering industry, is rendered exceptionally difficult, because, while the hours of labor are lessened, wages have increased and the cost of raw materials and other charges go up. Yet happily it is not an impossible one. The master key to its solution is to be found in a fuller employment of machine tools, in a large extension of their capacities and applications. A frank acceptance must be made of the truth that industrial salvation can only be achieved by the fullest employment of the very best machines available. Only thus can the hours of labor be lessened and its emoluments increased and capital outlay be safeguarded.

In the same article the author suggests that the end has by no means been reached in machine tool design, and in this he is right, of course. But the common expectation is that future improvements will be for the most part refinements

in design and a more highly concentrated specialization of purpose, and this means that a buyer today runs little risk of finding his equipment rendered obsolete by any such radical changes as those of a decade ago which resulted from the introduction of the high speed tool steels. On this point the article says:

> Some may, perhaps, be disposed to believe that the force of inventive genius applied to machine tool economies must be nearly exhausted. When one contemplates the astonishing performances of many machine tools at the present day, the belief seems to have justification. It would appear that the cost economies possible have been embodied in these: that the greatest developments and refinements in precise self-acting and in automatic movements have been achieved. Many people probably held these views, too, five years ago. But the exigencies of the terrible war became an imperious driving force before which conventional methods were shattered, and "other ways" and methods were achieved under national stress and strain. The results of that period remain, and the present insistent requirements for reconstruction, intensified by approaching international rivalries, and by changed labor conditions, may be expected to produce results.

Arbitration in Public Strikes

A nation-wide movement to establish laws for the compulsory arbitration of disputes between public service corporations and their employees is taking form in a way that promises results. The purpose is to make impossible a strike or lockout which would tie up steam or street railroad, gas or electric plant, telephone or telegraph system, or any other public utility, thus to protect the rights of the third party in every such dispute, the public, whose interests exceed many times over those of either the corporation or its workers. The elements of population which are vitally interested today include not only the people of the cities and towns, but dwellers in the country districts, who every year become more dependent upon the public utilities which are constantly reaching out to serve them.

There is a strong hope that organized labor will unite in the new effort. Able lawyers, who have studied into the legal questions involved, assert that nothing in the Federal constitution or in the constitutions of the various States stands in the way of effective laws compelling arbitration, with penalties under the criminal code, in disputes involving public service corporations. If organized labor joined in the movement it would merely concede the abandonment of the strike as a weapon in this limited class of operations. Seemingly it would not matter whether the plant or system be open shop or union shop. But some form of organization of employees would probably be necessary.

Various influences have operated to change the attitude of workers toward arbitration in disputes affecting the public. When employees of public service corporations go on strike they demand much of workers in other trades. Railroad men cut off the supply of ice and milk and food generally. Employees of gas companies cut off the supply of light and heat; those of electric companies, the power with which other workers operate their machines. A handful of men, by abandoning their posts, might seriously jeopardize the interests of those to whom they look for the sympathy without which few strikes are won. Naturally the mass of the workers tire of the sacrifice, especially as the simplicity of the remedy is brought before them.

Arbitration as a general principle is coming more and more into favor with employees. A strong influence in this connection was the war. Hundreds of disputes which might have been serious were settled by arbitration boards; under Federal control the method was compulsory. Employees realized that there was no break in the continuity of their employment. Not only was earning power maintained, but in almost every case the award was in favor of the employees and was retroactive, so that a day came when the pay envelope contained a lump sum over and above the old scale. It was all very pleasant. Naturally the thousands who went through this experience can see less reason than before for going without transportation service, and gas and telephone, pending the settlement of disputes.

Another influence is due to the fact that leaders of alien blood and alien ideals, whose creed is violence to person and property, are forcing themselves in with increasing insistence into the councils of American labor. Strikes do not look the same to decent men and women when these European accessories are hitched on to them. The strike of the employees of the Graton & Knight Mfg. Co., Worcester, Mass., is a notable example. The union leaders themselves, including the national organizer, favored the acceptance of the company's terms, even though they contained no recognition of any union. A great majority of the 1500 strikers would have been glad to return immediately to work. But the union vote was against it, because a foreign element, lead by extremists from Russia, Poland, Lithuania, Austria and Italy, used threats of personal violence. These men made it necessary that the strike work itself out to a gradual resumption of operations.

The need of compulsory arbitration for the public utilities has been emphasized lately at Boston, where the street railroad system of the city and its suburbs was tied up before any attempt to procure arbitration was made, and progress toward a settlement was delayed further by the failure to agree on arbitrators. At Providence, and in fact over nearly the whole State of Rhode Island, a strike was declared and the receivers of the financially embarrassed street railroad company declined to agree to arbitration. In both these instances compulsory arbitration would have saved vast inconvenience and money loss.

Sintering Plant at Ironton, Ohio

A license to use the Dwight & Lloyd process of treating iron bearing materials has been issued to the Marting Iron & Steel Co., Ironton, Ohio, by the American Ore Reclamation Co., 71 Broadway, New York. Work has begun on a sintering plant constructed of steel and consisting of a Dwight & Lloyd machine with the units installed near the ground level. The capacity of the plant will be about 150 tons of sinter a day from flue dust alone, with a larger capacity when the flue dust is mixed with pyrites, cinder or roll scale.

The Dwight & Lloyd plant of the American Steel & Wire Co., at Donora, Pa., has just been completed. This contains a double-length sintering machine with a capacity of about 300 tons a day. One of the company's sintering plants is also being constructed for the Carnegie Steel Co. at Farrell, Pa.

Harvester Co. Employees Resume Work

CHICAGO, Aug. 5.—The tractor works, one of the four plants of the International Harvester Co., which have been closed because of labor trouble, resumed operation to-day, 1000 out of the 1800 employed at the time of the shut-down returning to work. The company does not regard its recent labor difficulties as proof of the failure of the plan of employees' representation which it introduced this spring. It is pointed out that the trouble started at the McCormick Harvester Works, the only local plant which did not adopt the plan. Here, on July 15, a small proportion of the employees walked out apparently by preconcerted action and urged their fellows to do likewise. As the day wore on the plant was emptied of men as a result of the pressure brought to bear by those who first left. Subsequently because of violence and intimidation it was thought best to close the McCormick Twine Mill, the tractor works and the Deering Works. In fact it was on the recommendation of the employees representatives on the Deering Works industrial council that that plant was closed. It was also at the instance of employees' representatives that work was resumed at the tractor works to-day. This is regarded as sufficient vindication of the council plan. The closing of the plants except in the case of the McCormick Harvester Work was not because of a strike, but rather because of fear of violence at the hands of shifting mobs of idle men.

It is asserted that the striking employees of the Crane Co. participated in the organized movement for the intimidation of the men. The plant of the Illinois Malleable Iron Works, located near the Deering Works, was also closed because of pressure brought to bear by strikers. The plants of the International Harvester Co. situated in other parts of the city were not affected nor was the Wisconsin Steel Works at South Chicago.

At the McCormick works the men walked out without presenting any demands. It was not until July 28, thirteen days after the walkout, that a committee claiming to represent a union of employees of the McCormick works, Deering works, tractor works and the McCormick twine mill presented demands for a 48-hr. week, 8-hr. day, double time for overtime, a closed shop and a detailed wage scale of from 70 cents to $1 an hour; all employments not specified to be increased 45 cents an hour. The company informed the committee that it was ready to receive from them as employees any request or complaint relating to wages, hours, working conditions, or other matters of mutual interest, but that it would not deal with them as representatives of any union. It was made plain that the company has always operated on the open-shop principle and proposes to continue doing so.

Tacony Steel Buys Ordnance Plant

The Tacony Steel Co., Philadelphia, has purchased from the United States Government the plant of the Tacony Ordnance Corporation, which adjoins the plant of the Tacony Steel Co. in that city. The Tacony Ordnance Corporation was organized in August, 1917, by J. B. Warren, then secretary, but now president and gentral manager of the Tacony Steel Co., and George Satterthwaite, vice-president and treasurer. The plant was built at the behest of the War Department for the manufacture of steel forgings for 6-in. and 9.5-in. guns. A machine shop for rough boring and turning the forgings was also built and equipped, the rough-machined guns being shipped to other plants for finishing.

The ordnance plant is equipped with two 40-ton oil-burning furnaces producing acid open-hearth ingots of from 19,000 to 40,000 lb. The forge shop is equipped for handling forgings of the very largest sizes. With the consolidation of the two plants the Tacony Steel Co. will control the quality of its products from melting to shipment. The company makes a wide variety of products, but specializes in carbon and alloy steel, rolled bars, forgings and special shapes. District sales offices are located in New York, Boston and Cleveland.

No change in the officers or directorate will occur as a result of the consolidation. J. B. Warren is president; George Satterthwaite, vice-president and treasurer; Henry T. Stetson, secretary, and these officers, with O. W. Bird, Jr., and W. H. Turner, comprise the board of directors.

Locomotive Orders

The American Locomotive Co., Schenectady, N. Y., has received an order from the United States Railroad Administration for 25 locomotives to be used on the Texas & Pacific Railroad; 18 of the engines will be of Santa Fe type and 7 of Pacific type.

The Baldwin Locomotive Works, Philadelphia, has practically closed with the Polish Government for a number of locomotives, totaling in amount about $7,000,000. It has also sold eight locomotives to the Tata Iron & Steel Co. for 5 ft. 6 in. gage tracks.

CONTENTS

A Dayton Foundry of Progressive Design—Handling Arrangements Are Features of Interest 355
Definitions for Storeroom Material 357
Limiting of Transverse Rail Fissures 360
German Appropriation of French Machinery 362
Conditions of German Iron and Steel Industry 363
Disk Grinder with Lever Feed 364
Drill for Hexagonal and Square Holes 364
Welding Wrought Iron and Steel 365
Bending Roll for Structural Shapes 368
Finance Will Determine Trade with Italy 369
Sales and Allocation of Government Ships 370
Government Promotion of Trade with Germany Delayed 371
Conditions of Trading with Siberia 371
Belgian Purchasing Agencies 371
Combination Washing, Tumbling and Liming Machine .. 372
Addressing Correspondence to South America 372
Structural Export Markets 373
Basis of Selling Government Machine Tools to Schools .. 373
Conveyors Speed Assembly 374
Auction of 250 Machine Tools 374
Brasses of Unusual Strength 375
To Perfect Steam Automobiles 376
Plate Planer with Safety Features 376
Fixing Prices of Government Machine Tools 377
Machinery Trade with Italy 380
New Italian Import Regulations 380
Call Meeting to Standardize Invoices 380
Little Machinery Demand from South Africa 380
Electric Furnace Production in Germany 380
Employee Committees Adopted Following Graton & Knight Mfg. Co. Strike 381
The Worcester Molders' Strike 381
Illinois-Indiana Rate Fight 381
Price Fixing Proposed in Congress 382
New Rolling Mill at Economy, Pa 382
Tool Trade Strong in Canada 383
Centering Machine for Rough Forgings 383
June Exports of Iron and Steel, 544,580 Tons 384
Government Offerings of Steel 385
Government Machinery Sales 385
Overseas Surplus Material 386
Dwindling Steel Plant Profits 386
Lunkenheimer Co. to Treble Facilities 386
Truscon's Japan Plant 386
War Department Manufacturing on Orders for Various Government Departments 387
Adjustment of Steel Freight Rates from Huntington, W. Va. 387
Editorial:
Union Leaders' Defiance—Heavy Production of Plates—A British View on Machine Tools—Arbitration in Public Strikes 388-390
Future of Belgium Zinc Industry 391
Tacony Steel Buys Ordnance Plant 391
Railroad Strikes and High Living Cost 392
Financing Foreign Business 393
Pig Iron Production for July, 1919 394
Iron and Steel Markets 396
Export Trade—Further Reduction in Ocean Rates 405
Non-Ferrous Metals 406
Personal 408
Obituary 409
Overrules Protest Against Demurrage Charge 409
Pittsburgh and Nearby Vicinity 410
Pittsburgh Crucible Steel Additions 410
Large Steel Piping Contracts Closed 410
Steel Plant Activities at Youngstown 411
Machinery Markets and News of the Works 412
Current Metal Prices 422

Railroad Strikes and High Living Cost

Events Moving Rapidly at Washington—Union Leaders Demand Tripartite Control of Railroads, and Ultimately of Steel, Coal and Other Industries

WASHINGTON, Aug. 5.—The greatest industrial problem the Washington authorities are now trying to solve is that of the high cost of living. Unfortunately a lot of politics has already been injected into it, and there is no telling how far genuine constructive solutions may be expected.

Except for Secretary Redfield's ill-fated Industrial Board plan, the Administration had carefully sidetracked all suggestions of tackling the problems of readjustment. But when the representatives of four railroad brotherhoods arrived in Wasaington last week to demand an increase of $800,000,000 in the annual wages of some 2,000,000 railroad workers, President Wilson acted with startling speed. He got his Cabinet to work on the problem, and hurriedly induced the House of Representatives to abandon a five weeks vacation plan to help in the consideration. The only immediate remedy he urged came from Director General Hines of the Railroad Administration, suggesting legislation to create a new organization above the Interstate Commerce Commission, which would increase the railroad men's pay. The legislation would include the requirement that the rate-making body advance rates so as to take care of the wage increase.

At the same time, the Cabinet officials got to work, headed by Attorney General Palmer, whose chief suggestion seemed to center in plans for prosecutions under the Sherman and Clayton laws. To this there was opposition from other Cabinet members, and the final decision rests with the President.

Concurrently, a special committee was put to work, consisting of Director General Hines, Assistant Secretary Leffingwell of the Treasury department and Commissioner Colver of the Federal Trade Commission. They were to report suggestions to the President's Cabinet.

Government Control Must Continue

One of the first effects of the trainmen's demands for higher pay from a deficit-laden Railroad Administration was to bring into the foreground the labor union opposition to the return of the railroads to private ownership. Some of the leaders of the unions who appeared at the White House boasted that they would be able to prevent any such return, and at the same time talked about the coming "upheaval." The publicity agents for the "Plumb plan" of turning the railroads over to the so-called tripartite control started new operations at the same time, and Representative Sims of the House Committee on Interstate and Foreign Commerce, in charge of railroad legislation, introduced their bill and had it referred to that committee.

The feature most immediately threatening the industries of the country was the strike of the railroad shop workers, which crippled railroads and industries in various sections of the country, the shutting down of blast furnaces and steel works at Gary, Ind., being one of the first results. It was conceded that this was but a forerunner of further trouble. The railroad labor situation is bound also to have an important influence on the question of the proposed steel strike which is threatened by the American Federation of Labor to enforce the recognition of the unions by various steel industries.

Director General Asks Special Legislation

The seriousness of the railroad labor situation is presented in a letter which Director General Hines sent to President Wilson and which the latter sent to Congress. In it he says that several months ago the railroad shop employees asked for an increase in wages. The Railroad Administration's Board of Wages and Working Conditions was not able to agree on the matter, but on July 16 the three labor members made a report recommending a general increase in wages, including an advance from 68c. to 80c. per hour in wages of machinists and proportionate advances to other classes of workers. The three management members of the board reported against a general increase, but recommended certain readjustments of the wages of some classes of employees. The labor management members of the board pointed out that the wages of railroad shop men are substantially below those paid similar classes of workmen in the navy yards, arsenals and shipyards. The other members of the board urged, instead of a general advance in wages, the adoption of effective methods of reducing the cost of living.

New Labor Advances, $800,000,000 a Year

The Director General said that he had positive assurances that any general increase to shop employees would result in demands for corresponding increases to every other class of railroad employees. An increase of 12c. an hour, as asked for by the shop men, would mean, if applied to all employees, including necessary overtime, an increase of $800,000,000 per year in operating expenses. The Government is already incurring a deficit of several hundred million dollars a year in operating the railroads, and additional wages cannot be paid, therefore, unless new revenues are produced through an increase in transportation rates. An immediate payment of additional wages would necessitate for several months an appropriation by Congress out of the treasury, because substantial increases in rates could not be made immediately effective. The Director General in conclusion recommended that Congress be asked promptly to adopt legislation providing a properly constituted body on which the public and labor will be adequately represented and which will be empowered to pass on railroad wage problems. Such legislation, he said, should also provide that if wage increases are decided on, it shall be mandatory upon the rate-making body to provide increased freight rates.

General Tie-up Threat

President B. M. Jewell, of the railroad department of the American Federation of Labor, and other representatives of the striking shop men conferred with President Wilson Monday. The President made it plain that he had not the power to grant the increases asked for. The representatives of the railroad workers announced that they would insist on Government ownership of the railroads and sharing in the profits by railroad employees. Some of the labor leaders announced as part of their program that the Plumb plan for tripartite control of the railroads, including employee representation on the directorates, be extended to coal, steel, packing and other basic industries. President Jewell said that if the Hines plan as suggested to the President were adopted by Congress the unions would "tie up the railroads so tight they will never run again."

Labor Notes

More than 6000 mechanics of the navy yard at Charlestown, Mass., held a demonstration in Boston last week as a protest to the laying off of fellow empoyees in 20 trades at the yard because of exhaustion of funds. Preceded by a band the men marched to the Common in Boston, where they held a meeting at the bandstand. Among the banners carried by the men was one of a representative of the Metal Trades' Council, reading: "Don't cut down work at the navy yard; cut down the high cost of living." A ship fitter's banner read: "During the war we had to fight or work; during peace we have to fight to work." Acting Mayor

Ford of Boston is taking steps to have Congress provide the necessary funds. About 10 per cent have been laid off in this yard.

Molders at the plants of the McIntosh & Seymour Corporation, manufacturer of engines, and the Enterprise Foundry Co., Auburn, N. Y., are still out on strike, having left their work in May.

The Baltimore Dry Docks & Shipbuilding Co., Baltimore, has eliminated the night shift at its plant, with reduction in working force of about 1000 men. It is said that operations will be continued with 7000 men until further notice.

The New Process Stove Co., Cleveland, has granted employees in the mounting department an 8-hr. day, with increase in wage scale. The men have been on strike for about three weeks.

Workers at the cutlery plant of J. Wiss & Sons, 31 Littleton Avenue, Newark, N. J., declared a strike July 30, due to the discharge of five men who, it is said, did unsatisfactory work. On Aug. 1 employees at the plant of Heinisch & Sons, Bruce Street, an affiliated organization, went out on strike in sympathy.

The American Chain Co. has placed a plan of insurance and benefits for employees in effect at its York, Pa., works, effective Aug. 1. The plan includes health insurance, cash benefits for birth in family, payment of funeral expenses, free legal advice, protection of workers who become permanently disabled and guaranteed competence in old age.

The Coldwell Lawnmower Co., Newburgh, N. Y., called a meeting of all employees on July 31 to announce that hereafter all pay would be on the basis of a 9-hr. day for 8-hr. work. The action of the company was entirely voluntary.

About 100 molders in four plants at Springfield, Ohio, struck July 28 for an 8-hr. day and recognition of the union.

Employees of the Walter A. Zelnicker Supply Co., belonging to a railroad brotherhood, went on strike July 30 for an increase of approximately 20 per cent in wages and a closed shop. The men have been receiving from 45c. to 56c. an hr.

The Northwestern Mfg. Co., Milwaukee, manufacturer of motors, dynamos and controlling devices, is experiencing a walkout of about 100 operatives. A short time ago the company granted the men an 8-hr. day, without reduction of pay from the previous 10-hr. schedule, but the strikers insist that the increase in wages is not sufficient to meet their demands. The strikers are mainly machinists and armature winders.

Employees of the Steelton, Pa., plant of the Bethlehem Steel Co. have presented petitions to officials for increased wages. The petitions come from various departments and are different in the demands. Frank A. Robbins, Jr., general manager, has announced that none of them can be met at this time. All of the petitions are friendly in their nature and no labor trouble is feared.

About sixty shops in Toronto, Ont., have resumed operations and the machinists in large numbers have returned to their posts. At a meeting recently held between the employers and representatives of the men the latter accepted the terms offered with little comment and were instructed to report for work at once. About 1200 men started to work immediately and it may be several days before all the strikers are placed, owing to the disorganized state of the shops following the strike. While the strike is generally admitted to be a failure in so far as the strikers did not receive the 44-hr. week and 50-hr. pay demanded, it is pointed out by union officials that these conditions, as well as the extra wages, have been conceded by 23 shops in the city at which the men have been working for some time past. The question of wages with the 56 shops will be settled at another conference of the union officials, the strike committee and the manufacturers. One of the union officials stated that the loss in wages to the men might be figured at something over $1,000,000, while the International paid out $560,000 in strike pay.

FINANCING FOREIGN BUSINESS

Secretary Redfield Proposes Changes in War Finance Corporation Law

WASHINGTON, Aug. 5.—After a conference with equipment manufacturers in New York on Thursday, Secretary of Commerce Redfield recommended to President Wilson that he favored legislation which would enable the War Finance Corporation to finance the sales of American rolling stock and railway equipment in Europe. Secretary Redfield pointed out that the one-billion-dollar fund placed at the disposal of the War Finance Corporation by Congress to finance our export business was limited so strictly that less than one million dollars' worth had been applied for. Secretary Redfield urges the removal of the limits of Section 21 of the present statute, which requires American manufacturers not only to provide ample security, but to assume the entire risk and responsibility for the transaction.

The suggestion approved by Secretary Redfield is for the War Finance Corporation to accept the notes of foreign governments at 1 per cent above the normal rate and pay the American manufacturers for the materials delivered to these European governments. Secretary Redfield points out that until the transportation systems of many of these European countries, particularly Poland, Serbia and Rumania, had been placed on their feet, all commerce of those countries would be paralyzed.

He would, therefore, extend the financing to other operations. One of these is represented in the application from a large French steel company, which is reported to be willing to spend six million dollars for American machinery and equipment, but finds that the present rate of exchange involves an increase in the actual cost of $1,200,000. To save this it is proposed that the finance corporation disregard the difference in exchange and accept the note of the French corporation, indorsed by French banks, for the cost of the machinery in dollars, to be repaid in dollars, at the end of a specified term of years.

"We are in grave danger," said Secretary Redfield, in discussing his suggestion, "of missing the greatest industrial and commercial opportunity that has ever been offered to this country. Europe needs everything we can sell, but unless we can finance its credits, it cannot afford to purchase from us. Great Britain is looking out for her manufacturers and we cannot blame them for taking advantage. For instance, I am informed that Rumania is in the market for 1500 locomotives. Great Britain has heretofore financed Rumania and has stipulated that none of this money shall be spent elsewhere than in the United Kingdom. As a result, Rumania cannot secure any locomotives at all, because the British manufacturers are not in a position to deliver them. Unless we arrange a similar financing system we cannot get into that market.

"I have also seen a letter from the European agent of a big equipment concern saying that he had tried to sell American locomotives for the Indian railways. Although his bid was lower than that of the British manufacturers, the British Government refused to consider it. He secured the influence of a prominent Indian official, but even that proved futile.

"The same is true of Egypt. We cannot compete with Canada in that market because Canada insists that her products be given preference. It is squarely up to us to take some action to secure some of this trade. It can be done by a change in the War Finance Corporation law, and I am urging that it be made.

"The difficulty with the present statute is that it has practically tied up the billion-dollar fund placed at the disposal of the War Finance Corporation. I am in favor of emergency legislation which will remove some of the restrictions and enable us to extend American commerce abroad." O. F. S.

Machinists in local contract shops at Peoria, Ill., have been granted a wage increase from 80 to 90½c. per hr.

MANY FURNACES BLOW IN

Estimated Active Capacity Increased About 20 Per Cent in July

July Output of 2,428,541 Gross Tons—Ferroalloy Production of 14,805 Gross Tons

The production of pig iron in July amounted to 2,428,541 gross tons or 78,340 tons daily as compared with 2,114,738 tons or 70,495 tons a day in June. There was a net gain of 39 stacks during the month, 46 being blown in and 7 blown out. The estimated capacity of the 239 furnaces in blast Aug. 1 is 85,635 gross tons as compared with 200 furnaces having a capacity of 71,700 tons active on July 1. Of ferroalloys 14,805 gross tons were made, this rate of production now having held for a full quarter. Output increased 55 per cent in the Wheeling district, 45 per cent in New York, 23 per cent in the Mahoning Valley, 19 per cent in the Pittsburgh district, 13 per cent in the Shenango Valley, and 10 per cent in the Chicago district.

Output by Districts

The accompanying table gives the production of all coke and anthracite furnaces for July and the three months preceding:

Pig Iron Production by Districts—Gross Tons

	July (31 days)	June (30 days)	May (31 days)	April (30 days)
New York	174,989	120,989	135,110	166 169
New Jersey	8,853	8,034	9,621	9,372
Lehigh Valley	77,273	67,706	72,660	72,155
Schuylkill Valley	49,003	49,866	53 861	54,755
Lower Susquehanna and Lebanon Valleys	38,288	36,255	43,797	39,334
Pittsburgh district	547,883	461,268	446,998	531,517
Shenango Valley	119,260	105,608	77,657	113 765
Western Pennsylvania	95,193	95,280	91,992	114,248
Maryland, Virginia and Kentucky	34,130	31,694	34 012	55,957
Wheeling district	82,316	53 002	46,799	82,641
Mahoning Valley	313,762	254,507	234,007	221,918
Central and Northern Ohio	192,874	185,158	208 059	268,784
Southern Ohio	53,936	58,912	59,132	51,998
Chicago district	391 986	358,119	344,390	416,009
Mich., Minn., Mo., Wis., Colo. and Wash.	90,433	81,729	108,108	112,811
Alabama	151,192	139 159	137,169	149,708
Tennessee	7,640	7,452	12,684	17,077
Total	2,429,011	2,114,738	2,108,056	2,478,218

Daily Rate of Production

The daily rate of production of coke and anthracite pig iron by months, from July, 1918, is as follows:

Daily Rate of Pig-Iron Production by Months—Gross Tons

	Steel Works	Merchant	Total
July, 1918	79,248	31,106	110,354
August	80,947	28,394	109,341
September	83,579	30,363	113 942
October	83,686	28,796	112,482
November	83,395	28,407	111,802
December	81,445	29,317	110,762
January, 1919	78,388	28,137	106,525
February	78,910	26,096	105,006
March	73,468	26,217	99,685
April	61,289	21,318	82,607
May	51,187	16,815	68 002
June	51,865	18,630	70,495
July	61,503	16,837	78,340

The figures for daily average production, beginning with January, 1913, are as follows:

Daily Average Production of Coke and Anthracite Pig Iron in the United States by Months Since Jan. 1, 1913—Gross Tons

	1913	1914	1915	1916	1917	1918	1919
Jan.	90,172	60,808	51,659	102,746	101,643	77,799	106,525
Feb.	92,369	67,453	59,813	106,456	94,473	82,835	105,006
Mar.	89,147	75,738	66,575	107,667	104,882	103,648	99,685
Apr.	91,759	75,665	70,550	107,592	111,165	109,607	82,607
May	91,039	67,506	73,015	108,422	110,238	111,175	68,002
June	87,619	63,916	79,361	107,053	109,002	110,793	70,495
July	82,601	63,150	82 691	104,017	107,820	110,354	78,340
Aug.	82,057	64,363	89,666	103,346	104,772	109,341	.....
Sept.	83,531	62,753	95,085	106,745	104,465	113,942	.....
Oct.	82,133	57,361	100,822	113,189	106,550	112,482	.....
Nov.	74,453	50,611	101,244	110,394	106,859	111,802	.....
Dec.	63,987	48,896	103,333	102,537	92,997	110,762	.....

Production of Steel Companies

Returns from all furnaces of the United States Steel Corporation and the various independent steel companies show the following totals of steelmaking iron month by month, together with ferromanganese and spiegeleisen. These last, while stated separately, are also included in the columns of "total production."

Production of Steel Companies—Gross Tons

	Total production			Spiegeleisen and ferromanganese		
	1917	1918	1919	1917	1918	1919
Jan.	2,244,203	1,756,208	2,430,022	38,792	30,695	32,787
Feb.	1,829,846	1,620,254	2,209,470	32,137	26,114	28,105
Mar.	2,285,430	2 349,419	2,277,507	36,563	39,122	26,644
Apr.	2,370,937	2,411,488	1,838,677	39,595	35,511	17,308
May	2,404,380	2 513,577	1,586,805	37,701	54,633	14,604
June	2,304,155	2,407,166	1,655,944	30,829	44,844	14,254
July	2,369,630	2,456,693	1,906,604	43,884	51,762	14,805
Aug.	2,214,513	2,509,357	.....	39,492	54,009	.....
Sept.	2,198,705	2,507,381	.....	42,235	66,275	.....
Oct.	2,376,589	2,594,277	.....	48,691	70,379	.....
Nov.	2,349,545	2,501,867	.....	34,688	59,638	.....
Dec.	2,094,659	2,524,794	.....	29,902	49,435	.....

The furnaces blown in include Harriet Y, No. 6 Lackawanna, Niagara B and No. 2 Donner in the Buffalo district; Saucon and one Palmerton in the Lehigh Valley; Robesonia in the Lebanon Valley; two American Steel & Wire stacks, No. 2 Carrie, Nos. 1 and 3 Clairton, three Edgar Thomson, No. 3 Isabella and one Eliza in the Pittsburgh district; Sharon and No. 3 Farrell in the Shenango Valley; one Johnstown in western Pennsylvania; Oriskany in Virginia; Norton in Kentucky; two Bellaire and the new 600-ton Weirton stack in the Wheeling district; No. 3 Ohio and Mattie in the Mahoning Valley; Franklin, Steelton, one National Tube and Nos. 1 and 3 River in Ohio; one Federal, Nos. 1 and 3 Joliet, No. 3 South Chicago (new), No. 8 South Chicago (old), Nos. 2 and 4 Iroquois, No. 5 Gary and one Madeline in the Chicago district; Alabama City, one Pioneer, one North Birmingham, and one Woodward in Alabama.

Among the furnaces blown out are Musconatcong in New Jersey; Clinton in the Pittsburgh district; Globe and Jisco in southern Ohio; one Federal in the Chicago district, Zug in Michigan, and Tuscaloosa in Alabama.

Capacities in Blast Aug. 1

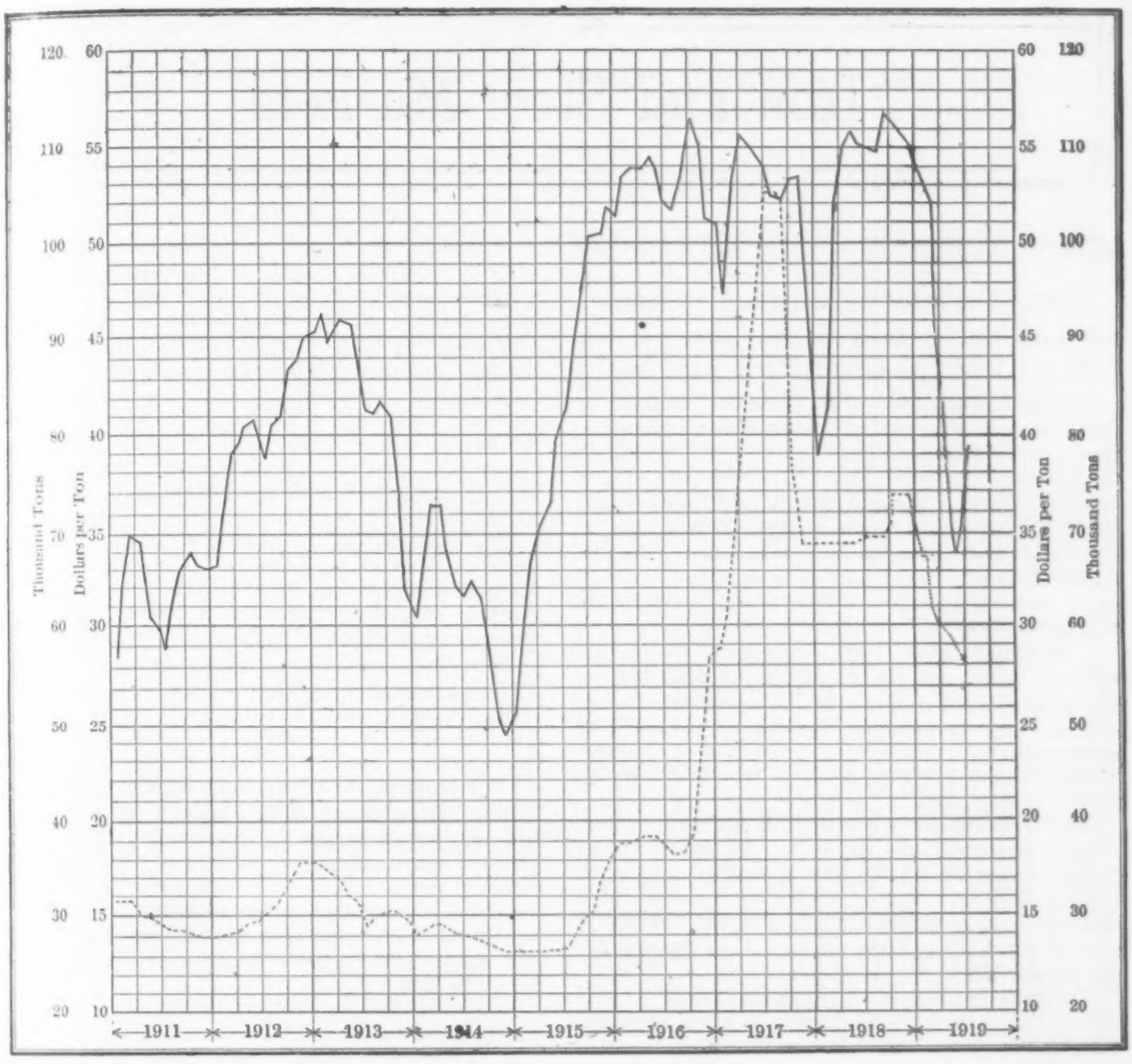
The following table shows the number of furnaces in blast Aug. 1 in the different districts and their capacity, also the number and daily capacity in gross tons of furnaces in blast July 1:

Coke and Anthracite Furnaces in Blast

Location of furnaces	Total number of stacks	Aug. 1 Number in blast	Aug. 1 Capacity per day	July 1 Number in blast	July 1 Capacity per day
New York:					
Buffalo	22	18	5,975	14	4,390
Other New York	4	1	195	1	195
New Jersey	5	1	185	2	310
Pennsylvania:					
Lehigh Valley	18	12	2,400	10	2,170
Spiegel	2	1	190	1	95
Schuylkill Val.	15	6	1,885	6	1,885
Lower Susquehanna	11	2	875	2	875
Lebanon Valley	10	2	330	1	200
Pittsburgh Dist.	52	42	20,000	33	15,500
Ferro and-Spiegel	5	2	270	2	270
Shenango Val.	19	12	3,270	10	3,170
Western Pennsylvania	28	11	3,250	10	3,050
Maryland	4	1	360	1	360
Wheeling District	15	9	3,055	6	1,955
Ohio:					
Mahoning Val.	27	22	10,275	20	8,550
Central and Northern	26	19	7,195	14	6,100
Southern	17	7	1,700	9	1,900
Illinois and Ind.	40	33	15,170	25	12,400
Mich., Wis. and Minn.	13	6	1,375	7	1,650
Colo., Wash and Mo.	8	3	1,050	3	1,050
The South:					
Virginia	17	5	680	4	580
Kentucky	7	2	325	1	100
Alabama	44	19	5,125	15	4,670
Ferro	1	1	75	1	50
Tennessee	17	2	225	2	225
Total	427	239	85,635	200	71,700

Diagram of Pig-Iron Production and Prices

The fluctuations in pig-iron production from 1910 to the present time are shown in the accompanying chart. The figures represented by the heavy line are those of daily average production by months of coke and anthra-



The Full Line Represents the Daily Production of Pig Iron and the Dotted Line Is the Average of the Price Per Ton of No. 2 Southern Pig Iron at Cincinnati, Local No. 2 Iron at Chicago and No. 2X Iron at Philadelphia

cite iron. The dotted curve on the chart represents monthly average prices of Southern No. 2 foundry pig iron at Cincinnati, local No. 2 foundry iron at furnace at Chicago, and No. 2 X at Philadelphia. They are based on the weekly quotations of THE IRON AGE.

Production of Coke and Anthracite Pig Iron in the United States by Months, Beginning Jan. 1, 1915—Gross Tons

	1915	1916	1917	1918	1919
Jan.	1,601,424	3,185,121	3,150,938	2,411,768	3,302,260
Feb.	1,674,771	3,087,212	2,645,247	2,319,299	2,940,168
Mar.	2,063,834	3,337,691	3,251,352	3,213,091	3,090,243
Apr.	2,116,494	3,227,768	3,334,960	3,288,211	2,478,218
May	2,263,470	3,361,073	3,417,340	3,446,412	2,108,056
June	2,380,827	3,211,588	3,270,055	2,323,791	2,114,863
July	2,563,420	3,224,513	3,342,438	3,420,988	2,428,541
7 mos.	15,664,237	22,634,966	22,412,330	20,423,560	18,462,349
Aug.	2,779,647	3,203,713	3,247,947	3,389,585	.....
Sept.	2,852,561	3,202,366	3,133,954	3,418,270	.....
Oct.	3,125,491	3,508,849	3,303,038	3,486,941	.....
Nov.	3,087,308	3,311,811	3,205,794	3,354,074	.....
Dec.	3,203,322	3,178,651	2,882,918	3,433,617	.....
Total year*	29,662,566	39,039,356	38,185,981	38,506,249	.....

*These totals do not include charcoal pig iron. The 1918 production of this iron was 347,224 tons.

The Phoenix Iron Works Co., Meadville, Pa., recently placed a contract for a two-story brick and steel machine shop, 64 x 240 ft. in size. The building will complete a program of construction and improvements initiated by the Phoenix company four years ago, including foundry and plate fabrication shops.

Blast Furnace Notes

Oriskany furnace, near Lynchburg, Va., operated by E. J. Lavino & Co., Philadelphia, blew in July 31 for the production of pig iron. Within about 60 days the furnace, it is understood, will return to ferromanganese production, for which it was used during the war. The plant will give employment to about 100 men.

No. 1 Etowah furnace of the Alabama Co., at Gadsden, Ala., blew in Aug. 3.

The furnace of the LaFollette Coal & Iron Co. at LaFollette, Tenn., will blow in about Aug. 10.

The Thomas Furnace Co., Milwaukee, specializing in low phosphorus pig iron, has contracted with the Worden-Allen Co., Milwaukee, for the construction of a new pig casting machine requiring 100 tons of structural material.

The Alabama Co. is blowing in a second Gadsden stack this week. The Tennessee Coal, Iron & Railroad Co. is operating six stacks at Ensley and one at Alice on basic, one at Bessemer on foundry, also a small one on ferromanganese for its own use.

Because of the widening of Carson Street on the South Side, Pittsburgh, the Carnegie Steel Co. will abandon its Painter mills on that street. It may build additional mills at McDonald, Ohio, for the manufacture of cotton ties, which have been made in the Painter mills for many years.

Iron and Steel Markets

SOME STRIKE SHUT-DOWNS

Labor Uncertainty a Factor in Steel

Pig Iron Output Increases and Shipyard and Export Business—Concession in Basic Iron

Actual stoppage of pig iron and steel making by railroad strikes in the Cleveland and Chicago districts in the past week have given more weight to the possibility of curtailment by strikes in the steel industry itself. Blast furnaces and steel works operations of the American Steel & Wire Co. at Cleveland have been largely suspended. At the South Chicago works of the Illinois Steel Co. 7 out of 12 blast furnaces are banked, and at Gary 14 out of 44 open-hearth furnaces are idle.

The unionizing of blast furnace and steel plant workers in the Pittsburgh and Ohio districts has shown no marked progress in the week, but the outlook is more threatening because of the railroad shopmen's strike, and a new uncertainty has entered into the prospect for the remainder of the year.

The increase in pig iron in July was pronounced, as was expected, the total for the month being 2,428,541 tons, or 78,340 tons a day, as against 2,114,738 tons in June, or 70,495 tons a day. The blowing in of furnaces kept up through the month so that 239 were in blast on Aug. 1, as against 200 one month previous.

Pig iron production at the beginning of August was at the rate of 85,635 tons a day, as compared with 71,700 tons a day at the beginning of July, the present operation being at a yearly rate of about 31,500,000 tons, whereas the 1918 output was 39,400,000 tons.

Apart from the labor factor, the prospect with the opening of August was highly satisfactory. Now some hesitation is evident, whereas before the desire of buyers to place orders was plainly greater than that of producers to take them on. Pig iron melters, for example, were asking about iron for the early months of 1920, but chiefly due to fuel uncertainties furnace companies preferred not to sell. The arbitrary attitude of railroad labor has had a widespread unsettling influence.

Export trade picked up toward the end of July after a quieter fortnight. The placing of 150 locomotives for Poland with the Baldwin Locomotive Works, which accepts 10-year equipment notes, came after long negotiations. Orders for 8000 to 10,000 cars are expected to follow, but the arrangements of a car trust may be long drawn out. Thus far manufacturers have been more active than bankers on these European deals and the need of strong leadership has been marked.

A fully financed enterprise, the Tata Steel Works in India, is figuring on American steel for large additions which will take nearly 20,000 tons of structural shapes. British works cannot meet the deliveries wanted.

Japan is a persistent buyer, especially of ship plates, having just closed 9500 tons in Philadelphia, with 10,000 tons pending. An inquiry from Italy for steel for six 8000-ton ships represents 16,000 tons of plates and shapes.

There is some confusion in news from Europe, with unconfirmed reports of American capital figuring. Americans, for example, are reported to have acquired control of an Austrian steel plant. Thirty steamers are expected soon to load Swedish ore for German blast furnaces.

Shipyard developments have been important. Standard Oil, fruit company and trawler orders represent upward of 20,000 tons of plates. The Steel Corporation's notable program, now in process, calls for 11 ships to be built at its Federal yard and 10 at its Mobile yard.

Plate orders have improved at Eastern mills and cut prices are less in evidence. Actual advances in finished products are regarded as more a contingency in case of strikes than as forced by demand, the leading producer's policy being rather one of price maintenance through 1919.

Chicago makers of rail carbon bars have advanced their prices $2, because of the high price of rerolling rails. Large structural rivets and boiler rivets have advanced $4 a ton.

The tendency to advance pig iron prices is seen both in Southern and Buffalo district products. One Southern producer put up prices 75c from Aug. 1. There is some figuring on 1920 iron, but sales have not been large. On a 20,000-ton purchase of basic iron by a Northern Ohio steel company, a concession was made from the Valley furnace price of $25.75 and transactions in basic have been reported at not far from $25.

Machine tool prices are advancing. Lathes, which showed some weakness in the spring, are now 5 to 15 per cent higher. Automobile makers have been large buyers of machine tools, a recent Cleveland purchase including 250 to 300. A Cuban shipyard contract for a repair plant to cost $5,000,000 has been closed at Boston.

Recent offerings in this country of British ferromanganese at $10 below the price of domestic has led to some agitation of an import duty.

Pittsburgh and Eastern scrap markets developed advances in the week with increasing activity. The possible effect of railroad strikes is illustrated at St. Louis, where, as train movement was curtailed, scrap declined from $1 to $2 a ton.

Pittsburgh

PITTSBURGH, Aug. 5.

The outlook for the labor situation is giving local employers a good deal of concern. While there has been practically no labor trouble in the Pittsburgh district proper, there is uneasiness as to the result of the vote being taken this week among the blast furnaces, iron and steel plants, and in fact in nearly all manufacturing works. The leaders of this movement to unionize labor in the iron and steel plants seem confident as to the result of the vote, and claim that indications now are that the majority of the men will go out on strike. The severe labor troubles that have broken out at Cleveland and in the Chicago districts, chiefly on account of the railroad situation, are referred to by the labor leaders here as what may be expected in the Pittsburgh district when the result of the vote has been reached.

Reports of sales managers of leading steel companies indicate that the volume of business in nearly

A Comparison of Prices

Advances Over the Previous Week in Heavy Type, Declines in Italics

At date, one week, one month, and one year previous

For Early Delivery

Pig Iron, Per Gross Ton:	Aug. 5, 1919	July 29, 1919	July 8, 1919	Aug. 6, 1918
No. 2 X, Philadelphia‡	$29.60	$29.60	$28.60	$34.40
No. 2 Valley furnace†	26.75	26.75	26.75	33.00
No. 2 Southern, Cin'ti†	28.35	28.35	28.35	36.60
No. 2, Birmingham, Ala.†	26.75	26.75	24.75	33.00
No. 2 furnace, Chicago*	26.75	26.75	26.75	33.00
Basic, del'd, eastern Pa.	26.60	26.60	26.00	32.90
Basic, Valley furnace	25.75	25.75	25.75	32.00
Bessemer, Pittsburgh	29.35	29.35	29.35	36.60
Malleable, Valley	27.25	27.25	27.25	33.50
Malleable, Bess., Ch'go*	27.25	27.25	27.25	33.50
Gray forge, Pittsburgh	27.15	27.15	27.15	33.40
L. S. charcoal, Chicago	31.75	31.75	31.75	37.85
Rails, Billets, Etc., Per Gross Ton:				
Bess rails, heavy, at mill	$45.00	$45.00	$45.00	$55.00
O.-h. rails, heavy, at mill	47.00	47.00	47.00	57.00
Bess. billets, Pittsburgh	38.50	38.50	38.50	47.50
O.-h. billets, Pittsburgh	38.50	38.50	38.50	47.50
O.-h. sheet bars, P'gh	42.00	42.00	42.00	51.00
Forging billets, base, P'gh.	51.00	51.00	51.00	60.00
O.-h. billets, Philadelphia	42.50	42.50	42.50	51.30
Wire rods, Pittsburgh	52.00	52.00	52.00	57.00
Finished Iron and Steel, Per Lb. to Large Buyers:	Cents	Cents	Cents	Cents
Iron bars, Philadelphia	2.745	2.745	2.595	3.73
Iron bars, Pittsburgh	2.75	2.75	2.75	3.50
Iron bars, Chicago	2.62	2.62	2.50	3.50
Steel bars, Pittsburgh	2.35	2.35	2.35	2.90
Steel bars, New York	2.62	2.62	2.62	3.145
Tank plates, Pittsburgh	2.65	2.65	2.65	3.25
Tank plates, New York	2.92	2.92	2.92	3.495
Beams, etc., Pittsburgh	2.45	2.45	2.45	3.00
Beams, etc., New York	2.72	2.72	2.72	3.245
Skelp, grooved steel, P'gh.	2.45	2.45	2.45	2.90
Skelp, sheared steel, P'gh.	2.65	2.65	2.65	3.25
Steel hoops, Pittsburgh	3.05	3.05	3.05	3.50

*The average switching charge for delivery to foundries in the Chicago district is 50c. per ton.
†Silicon, 1.75 to 2.25; ‡Silicon, 2.25 to 2.75.

Sheets, Nails and Wire, Per Lb. to Large Buyers:	Aug. 5, 1919 Cents	July 29, 1919 Cents	July 8, 1919 Cents	Aug. 6, 1918 Cents
Sheets, black, No. 28, P'gh.	4.35	4.35	4.35	5.00
Sheets, galv., No. 28, P'gh.	5.70	5.70	5.70	6.25
Wire nails, Pittsburgh	3.25	3.25	3.25	3.50
Cut nails, Pittsburgh	4.25	4.25	4.25	4.00
Fence wire, base, P'gh	3.00	3.00	3.00	3.25
Barb wire, galv., P'gh	4.10	4.10	4.10	4.35
Old Material, Per Gross Ton:				
Carwheels, Chicago	$26.00	$25.00	$22.50	$29.00
Carwheels, Philadelphia	24.50	24.00	23.00	29.00
Heavy steel scrap, P'gh	22.00	21.00	19.00	29.00
Heavy steel scrap, Phila.	20.00	19.00	19.00	29.00
Heavy steel scrap, Ch'go.	21.00	21.00	18.00	29.00
No. 1 cast, Pittsburgh	23.50	22.50	19.00	29.00
No. 1 cast, Philadelphia	24.00	22.50	23.00	29.00
No. 1 cast, Ch'go, net ton	24.00	24.00	22.00	28.25
No. 1 RR. wrot, Phila	26.50	25.00	24.00	34.00
No. 1 RR. wrot, Ch'go, net	21.00	20.50	17.00	29.75
Coke, Connellsville, Per Net Ton at Oven:				
Furnace coke, prompt	$3.90	$3.85	$4.25	$6.00
Furnace coke, future	4.12	4.12	4.12	6.00
Foundry coke, prompt	5.00	5.00	5.00	7.00
Foundry coke, future	5.00	5.00	5.00	7.00
Metals, Per Lb. to Large Buyers:	Cents	Cents	Cents	Cents
Lake copper, New York	23.00	23.75	20.00	26.00
Electrolytic copper, N. Y.	22.75	23.50	19.75	26.00
Spelter, St. Louis	7.50	7.80	7.15	8.10
Spelter, New York	7.75	8.15	7.50	8.40
Lead, St. Louis	5.50	5.75	5.15	7.75
Lead, New York	5.75	6.00	5.40	8.05
Tin, New York	70.00	70.00	70.50	94.00
Antimony, Asiatic, N. Y.	9.37½	9.37½	8.37½	13.00
Tin plate, 100-lb. box, P'gh.	$7.00	$7.00	$7.00	$7.75

all finished steel products in July showed a large gain over June, and that in some lines, notably sheets, tin plate, wire products and tubular goods, the gain in July over June was notable. There seems to be a strong desire on the part of jobbers and consumers to contract for as much material as they can for the remainder of this year, as there is a general fear that owing to labor troubles or other causes, the mills may not be able to get anything like full production in the latter part of the year, and a shortage may result. In fact, on some lines of finished steel there is pressure on the part of consumers and jobbers to have the mills enter their business.

In general, operations among the steel mills in the Pittsburgh district are on an 80 to 85 per cent basis. Some report they would be running practically 100 per cent if enough labor could be obtained.

Practically all traces of cutting in prices have disappeared, but on sheets two or three mills are occasionally cutting prices $2 to $4 per ton. The only notable change in prices in the week was an advance of $4 per ton in prices of rivets.

Pig Iron.—Following the fairly large sales of Bessemer and basic iron noted in our report last week, new inquiry has quieted down somewhat. The Monongahela Iron & Steel Co. has closed for about 6000 tons of Bessemer iron and 2000 to 3000 tons of forge iron for delivery over the remainder of the year, paying the full price of $27.95 for the Bessemer and $25.75 for the basic, at Valley furnace. It is also stated that a Mahoning Valley furnace has sold a fair quantity of No. 2 foundry iron for delivery over the last quarter at an advance of $2 per ton over the regular price, but this is not confirmed. A further sale of 3000 tons of forge iron to the Sligo Iron & Steel Co. at Connellsville, Pa., is reported at the regular price of $25.75, Valley furnace. Makers of pig iron are not inclined to sell for delivery beyond this year, owing to the uncertainty of labor, and possible higher prices for ore next year. It is figured that if there is to be a general advance in freight rates, and also in labor, ore will be higher next year. Ella furnace of E. W. Mudge & Co. is being made ready for blast, and will go in late this month or early in September. No. 1 furnace of the McKinney Steel Co. at Josephine, Pa., will likely go in about Aug. 20. Pig iron output in the Pittsburgh and Valley districts in July shows a large increase over that of June. Prices on pig iron are firm and we quote:

Basic pig iron, $25.75; Bessemer, $27.95; gray forge, $25.75; No. 2 foundry, $26.75; No. 3 foundry, $26.25, and malleable, $27.25; all per gross ton at Valley furnaces, and freight rate for delivery in the Cleveland and Pittsburgh districts being $1.40 per ton.

Ferroalloys.—There is a fair amount of new inquiry for ferromanganese in small lots for prompt shipment, but most consumers are covered this year. We note a sale of 200 tons of 80 per cent domestic ferromanganese for the last four months at $110 delivered. Prices on 50 per cent ferrosilicon are firmer and we note sales of three or four small lots, about 200 tons, at $85, delivered.

We quote 78 to 82 per cent domestic ferromanganese at $110 delivered, with a reduction of about $2 per unit for lower percentages. We quote 50 per cent ferrosilicon at $85, and 18 to 22 per cent spiegeleisen at $32 to $35, delivered. Prices on Bessemer ferrosilicon are: 9 per cent, $47.75; 10 per cent, $49.75; 11 per cent, $53.05; 12 per cent, $56.35. We quote 6 per cent silvery iron, $36.75; 7 per cent, $38.50; 8 per cent, $40.25; 9 per cent, $42.25, and 10 per cent, $44.75. About $3 per gross ton advance is charged for each 1 per cent silicon for 11 per cent and over. All the above prices are f.o.b. maker's furnace, Jackson or New Straitsville, Ohio, which have a uniform freight rate of $2.90 per gross ton for delivery in the Pittsburgh district.

Billets and Sheet Bars.—There is a decided scarcity in the supply of sheet bars for prompt delivery, and it is claimed they will command a premium in prices in the near future. One mill in the Youngstown district that rolls its own sheet bars and makes sheet and tin plate recently bought from nearby mills upward of 10,000 tons of sheet bars for this year delivery, for which it paid the regular price of $42 per ton at mill. Another maker of sheet bars has an inquiry out for 10,000 to 12,000 tons of sheet bars for delivery this

year. Labor troubles in the Chicago district have shut off shipments of sheet bars to the American Sheet & Tin Plate Co.'s mills in this district, and that company is running short of steel. Export inquiry for billets and sheet bars is fairly active, and a Youngstown mill is reported to have sold recently quite a large tonnage of soft billets for shipment to England. The Carnegie Steel Co. is not offering any billets or sheet bars in the open market, fully needing its entire output for its regular trade.

We quote 4 x 4 in. soft. Bessemer and open-hearth billets at $38.50, 2 x 2 in. billets at $42; sheet bars, $42; slabs, $41, and forging billets, $51 base, all f.o.b. at mill, Pittsburgh or Youngstown.

Plates.—The remarkable development in the oil fields is creating a marked demand for tanks and a good deal of the business going to the mills is for plates for tanks, stills and agitators. The Memphis Steel Construction Co. placed recently 2500 tons of such work with local mills. The car shops are getting more car repair work, but practically nothing is doing in the way of new cars. Plate mills are operating at 65 to 75 per cent of capacity, but have only a fair amount of work ahead. We quote ¼ in. and heavier tank plate at 2.65c. f.o.b. mill, Pittsburgh.

Structural Material.—The Bethlehem Steel Bridge Corporation was the low bidder and has secured the contract for the St. John's River Bridge in Florida about 3000 tons. The McClintic Marshall Co. has taken 900 tons for a warehouse for the Pittsburgh Gage & Supply Co., 300 tons for a cold mill building for the Superior Steel Corporation, Carnegie, Pa., 800 tons for a plate warehouse for the Youngstown Sheet & Tube Co. and 400 tons for the White Co. in New York. The Jones & Laughlin Steel Co. has taken 175 tons for the Pittsburgh Valve & Fittings Co., Barberton, Ohio, and the Pennsylvania Bridge Co., 300 tons for machine shop buildings for Phoenix Iron Works Co., Meadville, Pa. On Aug. 11 bids are to be taken on 1000 tons for a public library in Cleveland. Local fabricators report they are working at 75 per cent or better of capacity and say they are figuring on a good many jobs, which are slow in being closed. We quote beams and channels up to 15 in. at 2.45c., Pittsburgh.

Sheets.—A leading interest reports that its orders and specifications received in July for sheet and tin mill products were 50 per cent or more larger than its output when operating at full capacity. Mills that make a specialty of automobile sheets are practically sold up for remainder of this year. The export demand for sheets continues heavy, and the mills are booking a large part of it. This week the American Sheet & Tin Plate Co. is operating to about 92 per cent of its hot sheet mill capacity and this company and others already report a shortage in supply of labor. The sheet bar market is tightening up, and several mills are not getting sheet bars from their regular sources of supply as fast as needed. In spite of the active demand for all grades, two or three mills are still cutting prices to some extent. Prices on sheets, effective from March 21, are given in detail on page 407.

Tin Plate.—Mills report a steady increase in demand and leading mills are operating as close to 100 per cent of capacity as the supply of labor and steel will permit. The export demand is heavy and a local mill booked recently three orders for 20,000 boxes each for the Orient. Prices on export are firmer and $6.75 per base box is now about minimum. The mills expect to have full work over the remainder of this year, and a shortage in the supply of tinplate is predicted for later in the year should labor and steel become scarcer. We quote production tin plate for domestic use at $7 per base box, and for export at about $6.75 per base box. Prices on stock items are firmer and these are held at $6.50 to $6.75 f.o.b. Pittsburgh. Leading mills report demand for terne plate as heavy and are well sold up for this year. Prices on terne plate are given on page 407.

Muck Bar.—A local mill reports sales of about 5000 tons of standard grade muck bars at $70 per gross ton, delivered to consumers mills in this district. Low phosphorus muck bar is held at $85 to $90 per gross ton delivered.

Iron and Steel Bars.—Mills report a steadily increasing demand for both iron and steel bars, especially the latter, and local makers report output as well sold up over this year. However, the labor troubles in the Chicago district in the implement trade have resulted in specifications slowing down, but this may be only temporary. Makers of iron bars say they must have more for their product, owing to the steadily advancing prices for scrap, but so far no general advance has been made. The activity in building operations is creating a good demand for reinforcing steel bars, and nearly all sellers are now holding these at 2.65c at mill.

We quote steel bars, rolled from billets, at 2.35c., and from old steel rails, 2.45c. Pittsburgh mills rolling iron bars quote at 2.75c., Pittsburgh, plus full freight rate to point of delivery.

Wire Rods.—The domestic and export demand is quite heavy, especially the latter, several large inquiries for England being in the local market. In spite of the fact that the price on soft rods for shipment to Canada was recently advanced to $57, makers mill, a sale of 1000 tons for Canada was made in the past week at $52 at mill. We note a sale of 200 tons of soft rods to a domestic consumer at $52 at mill. Prices on rods to domestic consumers are given on page 407, but for Canada and export are said to be $5 per ton higher.

Wire Products.—As yet the American Steel & Wire Co. has not made any advance in its prices on wire and wire nails, so that the market is still on the basis of prices as adopted on March 21. However, the Pittsburgh Steel Co., the Youngstown Sheet & Tube Co., and the Cambria Steel Co., are quoting an advance on these prices of $2 on wire and $5 on wire nails. Orders and specifications in July showed an increase over June, and two local mills are practically out of the market for this year. Prices are given on page 407, but the three mills named are quoting the advance stated. Export prices on wire and wire nails are now given as $5 per ton higher than domestic prices.

Cotton Ties.—Business is pretty well over for this year. For August shipment cotton ties are quoted at $1.73 per bundle of 45 lb. f.o.b. Pittsburgh.

Hoops and Bands.—Demand for both hoops and bands is more active than for a long time. Two local mills are not promising delivery under three to four weeks. One local maker is said to have advanced prices on bands from 3.05c to 3.50c., Pittsburgh, but this particular mill is well sold up, and is practically out of the market. We quote hoops and bands at 3.05c., Pittsburgh, plus usual extras.

Hot Roll Strip Steel.—Mills report the new demand as very active, and state they are well filled up on orders over the next several months. It is stated that several hoop and band mills that were quoting hot rolled strips at the hoop and band price of 3.05c. have discontinued this practice. We now quote hot rolled strips for deep stamping and drawing uses at 3.35c. per lb., f.o.b. Pittsburgh.

Cold Rolled Strip Steel.—Demand is steadily getting better, and mills are operating at about 75 per cent of capacity. Consumers and jobbers are anxious to cover over this year, and the mills are entering business for that delivery.

We quote cold-rolled steel at $5.65 base per 100 lb., f.o.b. Pittsburgh, for 1½ in. and wider, 0.100 in. and thicker hard tempered in coils 0.20 carbon and under. Boxing charge 25c. per 100 lb.

Shafting and Screw Stock.—The bulk of the new buying is coming from automobile and automobile parts builders. The implement trade is not specifying very freely on contracts, due likely in part to labor troubles. A few of the smaller makers of shafting are still shading prices to some extent. Discounts quoted by the larger makers are 28 per cent off in carloads and 23 per cent in less than carloads, f.o.b. Pittsburgh.

Nuts and Bolts.—Demand is fairly active, and makers say they have a comfortable amount of work ahead. The automobile trade is buying heavily, but demand from other consumers is only fair. It is stated the recent advance in prices is holding firm. Discounts on nuts and bolts, as adopted several weeks ago, are given on page 407.

Rivets.—Effective Aug. 1, makers of rivets advanced prices $4 per ton. Demand is reported fairly active and makers say they have quite a good deal of work ahead. We now quote buttonhead structural rivets $3.90 and cone head boiler rivets $4 per 100 lb., f.o.b. Pittsburgh. No change was made in prices of small rivets, the discount on these remaining at 60, 10 and 5 off regular list. Makers state that costs are high and the advance just made was imperative. However, most large consumers are covered at the old prices over the remainder of the year.

Spikes.—Two local makers report they are sold up for some time ahead, being back three to four weeks in delivery. Standard spikes are quiet, railroads buying only in small lots needed for repair work.

We quote standard spikes, 9/16 x 4½ in., and also small spikes, $3.35 base per 100 lb. in carload lots of 200 kegs or more, plus usual extras. Boat and barge spikes, $3.85 per 100 lb. in carload lots of 200 kegs or more.

Skelp.—The few mills in this district that roll skelp for the open market report they are sold up for this year. Prices are very firm. We quote sheared steel skelp at 2.65c.; universal, 2.55c., and grooved, 2.45c. per lb., f.o.b. Pittsburgh, these being the prices fixed on March 21.

Iron and Steel Pipe.—Several local mills report they are not only closely scanning orders for lap weld pipe and oil well tubular goods, but are doing the same thing with butt weld pipe, as they have about all the business on their books on the latter they care to have. Some heavy inquiries for line pipe and oil well tubular goods are still in the market, but intending buyers are having trouble in finding mills that will accept the orders and make the delivery wanted. Orders and specifications received by several of the leading pipe mills in July were more than double their monthly capacity, so they are getting further behind in deliveries. The independent mills are seriously discussing a general advance in prices on all tubular goods owing to the enormous demand and the high cost of labor and steel, but have not come to a definite decision owing to the uncertainty as to what the leading interest will do in the matter. Some mills have a fair amount of business on their books in tubular goods for the first quarter. Discounts on iron and steel pipe are given on page 407.

Boiler Tubes.—Boiler tubes are in fairly active demand, but merchant tubes are quiet and there is still some shading in prices. Discounts on tubes, which, however, are not minimum of the market, are given on page 407.

Coke.—Early last week a surplus of coke was looming up, and prices on prompt coke were weak. Rather than meet the lower prices for prompt coke, some operators shut their plants down for two days. However, some grades of prompt furnace coke can be bought today at $3.90 per net ton at oven, but other makers are holding their coke firm at $4 and will not shade that price. The Reading Iron Co., Reading, Pa., expects to start two of its blast furnaces soon, and is inquiring for 5000 tons of coke per month for each furnace over the remainder of this year. The Republic Iron & Steel Co. also has an inquiry out for 10,000 tons of blast furnace coke per month for shipment over remainder of this year, and this latter transaction is likely to be closed in a day or two. We note sales of upward of 10,000 tons of prompt furnace coke in the past week at $3.90 to $4 per net ton at oven. We quote standard grades of prompt blast furnace coke at $3.90 to $4 per net ton at oven, and 72-hr. foundry coke at $5 to $5.25 per net ton at oven, either for prompt shipment or on contracts. Output of coke in the Upper and Lower Connellsville regions last week was 164,220 tons, an increase over the previous week of nearly 35,000 tons, and the largest output in these two regions in any one week for some months. An inquiry is reported in the market for 50,000 tons of foundry coke for shipment to Belgium.

Old Material.—A good deal of activity has marked the local scrap market in the past week, and prices on nearly all grades are up from $1 to $2 per ton, or more. Dealers who have a good deal of scrap piled in their yards are indifferent about selling, believing that the market will go higher in the very near future. The amount of scrap available is relatively small, and with the active demand from consumers prices are very firm, and likely to be higher. The scrap list of the Pennsylvania Lines East closes to-day, and it is said that prices bid on this scrap by dealers were much higher than for a long time. We note sales of upward of 5000 tons of selected heavy steel melting scrap at $22 delivered to buyer's mills in the Pittsburgh and nearby districts. Also 3000 to 4000 tons of low phosphorus scrap, bloom and billet ends, at $24 to $25 delivered. The leading consumer is offering $13.50 for turnings in small lots, and $14 in large lots. We have advanced prices on all grades of scrap from $1.50 to $2 per ton and now quote as follows:

Heavy steel, melting, Steubenville, Follansbee, Brackenridge, Monessen, Midland and Pittsburgh, delivered	$22.00 to $22.50
No. 1 cast, for steel plants	23.50 to 24.00
Rerolling rails, Newark and Cambridge, Ohio; Cumberland, Md.; Franklin, Pa., and Pittsburgh	21.50 to 22.00
Compressed steel	17.50 to 18.00
Bundled sheet, sides and ends, f.o.b. consumers' mills, Pittsburgh district	15.50 to 16.00
Bundled sheet stamping	15.50 to 16.00
No. 1 busheling	18.00 to 18.50
Railroad grate bars	18.00 to 18.50
Low phosphorus melting stock (bloom and billet ends, heavy plates) ¼ in. and heavier	25.00 to 25.50
Iron car axles	31.00 to 32.00
Locomotive axles, steel	31.00 to 32.00
Steel car axles	28.00 to 29.00
Railroad malleable	20.00 to 20.50
Machine shop turnings	13.50 to 14.00
Cast iron wheels	25.00 to 26.00
Rolled steel wheels	23.00 to 24.00
Sheet bar crop ends (at origin)	23.00 to 24.00
Heavy steel axle turnings	15.50 to 16.00
Heavy breakable casts	21.50 to 22.00
Cast iron borings	15.50 to 16.00
No. 1 railroad wrought	22.00 to 23.50

The Youngstown Foundry & Machine Co., Youngstown, Ohio, builder of rolls, rolling mill and steel works equipment, has secured a contract for building an 18-in. band mill to be installed by the Carnegie Steel Co. at its McDonald, Ohio, plant. The new mill, it is expected, will take about three months to build. The Youngstown Foundry & Machine Co. has built all the mills installed at the McDonald works. Recently, the company made shipment to South America of two of its enclosed head-stock type of roll lathes.

Sharpsville blast furnace of the Sharpsville Furnace Co., Sharpsville, Pa., will go in blast early in August on Bessemer iron, with an output of 200 tons per day. Bessie furnace, Bessie Furnace Co., New Straitsville, Ohio, will also blow in early in August on ferrosilicon, with an output of 75 to 80 tons per day. Allen S. Davison Co., Oliver Building, Pittsburgh, operates both stacks and sells their output.

The Heinle Co., Pittsburgh, metal rolling engineer, is furnishing several Canadian rolling mills with roll designs and self-explanatory charts on large rounds and squares, chain rounds and staybolts. Preparation for the improvements to roll these materials was deferred when the war started.

The Ball Engineering Co., Erie, Pa., is building an addition, 116 x 200 ft., to its steam shovel building, to increase its facilities for erecting its Erie shovels. Contracts for building and equipment have been placed, and the work is expected to be completed in about three months.

Chicago

CHICAGO, Aug. 5.

The strike of railroad shopmen is having serious effects on mill operation. The leading interest was the first to curtail production on this account, but other mills will be forced to shut down if a settlement is not effected soon. Seven out of twelve blast furnaces at the South Works also have been banked, but all the stacks at Joliet are still in blast. Fourteen out of 44 open hearth furnaces and all the sheet mills at Gary have suspended operations, while a plate mill and a slabbing mill at the South Works have shut down. The tie-up of these facilities, it will be noted, was not due to any action on the part of the workmen themselves, but to transportation difficulties resulting from a strike of railroad employees.

But for labor difficulties the business outlook would be bright. Car repair work and ship construction have resulted in orders for 15,000 tons, a large backlog, one local producer and one Eastern mill selling in this district being practically out of the market for the rest of the year. A number of independent interests have advanced galvanized sheets $4 a ton and black sheet $2 a ton. There have also been advances on bolts of 5 to 10 per cent and $4 a ton on large rivets.

Pig iron business done in this territory in July amounted to about 225,000 tons. Despite the labor situation the demand continues good. Scrap prices are not advancing as generally as heretofore.

Pig Iron.—While the July sales of some sellers here greatly exceeded their June records one of the most important factors in the market closed less tonnage than during the previous month. Of the merchant furnaces in this territory those now in blast include three Iroquois, one Federal, one Mayville, one at Bay View and the Zenith furnace at Duluth. The leading independent steel interest also has one furnace on foundry and Bay View will blow in another stack shortly. Despite the ominous labor situation, the market is active. Among recent orders placed are 2000 tons of foundry, bought by a Milwaukee melter; 5000 tons of off-sulphur foundry, bought by local jobbing foundry; 1500 tons and 500 tons of malleable taken by Wisconsin consumers, 500 tons of Bessemer purchased in Milwaukee, and 500 tons of copper-free low phosphorus. An important Southern interest which has taken little iron in this district this year because consistently it refused to absorb any of the freight charges announced a new schedule of prices, effective Aug. 1. The base price it is quoting on foundry is $27.50, f.o.b. Birmingham, or 75c. above the previous price. The differentials for added silicon, however, are irregular. Foundry iron, silicon 2.25 to 2.75 per cent, for instance, is quoted at $28.60, an advance of 60c. over the previous quotation. The next grade with a silicon content of 2.75 to 3.25 per cent is quoted at the same price as heretofore. The succeeding grade with silicon content of 3.25 to 3.75 per cent is quoted at 80c. below the old price. The next grade is 55c. below the previous quotation, while the price of 4.25 to 4.75 per cent iron has been reduced 25c. Iron running 4.75 to 5.25 per cent silicon is now quoted at $34.85, or 10c. above the previous price. This interest has sold 300 tons of 4.25 to 4.75 per cent iron on the new basis and recently placed 500 tons of Southern No. 2 at the old price. Another Southern seller has sold lots of 2000, 300 and 200 tons on the Birmingham basis. The Algoma Steel Corporation, which has been selling some foundry, silicon 2.25 to 2.75, at $26.75, furnace, is no longer offering any concessions and, in fact, is practically out of the market for the remainder of the year. A number of good-sized inquiries are before the trade, among them 1000 to 2000 tons of high silicon foundry, 500 tons of basic, 500 tons of silvery and 500 tons of foundry. An Illinois stove manufacturer is in the market for 500 tons of foundry for delivery in the first quarter of 1920. There are a considerable number of inquiries for 1920 iron and two Northern sellers have sold small amounts for first quarter at $2 above the present quotations. The Jackson County silvery furnaces are still out and the Red River, Tenn., furnace has not yet blown in. The Chattanooga producer, which has been selling silvery in this market, is practically sold out until the first of the year.

The following quotations are for iron delivered at consumers' yards, except those for Northern foundry, malleable and steel-making irons, including low phosphorus, which are f.o.b. furnace and do not include a switching charge averaging 50c. per ton:

Lake Superior charcoal, average silicon, 1.50, second half delivery, f.o.b. furnace, average freight to Chicago $2.50 (other grades subject to usual differentials)	$29.25
Northern coke foundry, No. 1 silicon, 2.25 to 2.75	28.60
Northern coke foundry, No. 2 silicon, 1.75 to 2.25	26.75
Northern high-phosphorus foundry	26.75
Southern coke, No. 1 foundry and No. 1 soft silicon, 2.75 to 3.25	34.75
Southern coke, No. 2 foundry, silicon, 2.25 to 2.75	33.60
Southern foundry silicon, 1.75 to 2.25	31.75
Malleable, not over 2.25 silicon	27.25
Standard Bessemer	27.95
Basic	25.75
Low phosphorus (copper free)	40.00
Silvery, 7 per cent	42.05

Ferroalloys.—There is little change in the situation, except for the appearance of a few hundred tons of resale ferromanganese, 68 to 72 per cent, and ferrosilicon 10 to 12 per cent, offered by a Kansas City firm. A considerable portion of this material has already been sold.

We quote 80 per cent ferromanganese at $115, delivered; 50 per cent ferrosilicon, at $80 delivered; spiegeleisen, 18 to 22 per cent, $35, furnace.

Structural Material.—An encouraging volume of business continues to develop, despite the setback suffered by local work as the result of the building trades lockout stop. Although the lockout is expected to terminate any day, some fabricators are having difficulties with their erecting forces. Either because of present or anticipated labor trouble, three local fabricators and one located in this vicinity have refused to figure on a pending structural job involving considerable steel. The Decatur Bridge Co., Decatur, Ill., will fabricate 1200 tons for an addition to the Grand Leader Building, St. Louis. The plans have been completed for the Black Hawk Hotel, Chicago, involving about 1200 tons. The Crerar Library, Chicago, according to the latest revision of the plans, will require a like tonnage. Vitzthum & Scheitler, architects, Chicago, are drawing plans for the Seiberling hotel and theater, a $3,000,000 structure to be constructed at Akron, Ohio. Recent awards in addition to the tonnage taken by the Decatur Bridge Co. include:

Montana State Highway Commission, highway bridges, 661 tons, to Missouri Valley Bridge & Iron Co.

Extension to Robert Dollar Building, San Francisco, 173 tons, to California Steel Co.

Trusses for Drake Hotel, Chicago, 442 tons, to Vanderkloot Iron Works, Chicago.

Moreys & Co. Building, Oklahoma City, Okla., 215 tons, to Vierling Steel Works, Chicago.

Astor Hotel, Milwaukee, 400 tons, to Northwestern Bridge & Iron Co.

Recent inquiries include:

Convent, Donaldson, Ind., 100 to 150 tons.

Middle West Utilities Co., power station, Tulsa, Okla., 200 tons, on which bids are being taken by Sargent & Lundy, engineers, Chicago.

Bars.—Rail carbon bars have advanced to 2.55c., mill, or $2 per ton above the old quotation. This action was necessitated by the high price of rerolling rails. There is a strong demand for hard steel bars, particularly for reinforcing work. Mill operation continues to improve, one mill having booked enough business to keep it running the remainder of the year. Orders and specifications for mild steel bars continue heavy. While business is coming from a great variety of sources, there is an exceptionally good demand for reinforcing bars, orders for 1000-ton lots being numerous. Considerable foreign business is being offered, but as the mills have their books well filled with domestic orders, it is not arousing much enthusiasm, particularly as it is generally conditional on the granting of concessions. One bar iron mill is now quoting 2.75c., Chicago. Three local railroads recently sent out inquiries for 1200 tons, 1500 tons and 500 to 1000 tons, and it is understood that the smallest of the three lots has been placed.

Notwithstanding the upturn in demand, bar iron mill operation is far from satisfactory.

Mill prices are: Mild steel bars, 2.35c. Pittsburgh, taking a freight rate of 27c. per 100 lb.; common bar iron, 2.62c., Chicago; rail carbon, 2.55c. mill. Jobbers quote 3.37c. for steel bars out of warehouse.

Plates.—The leading interest has received an order from a local car builder for 5000 tons of plates and shapes to be used on car repairs, this being in addition to the tonnage mentioned in this column a week ago. The Emergency Fleet Corporation has released five additional vessels in the Pacific Coast construction program and though some of the necessary material is now in the shipyards, the remaining requirements, amounting to about 8000 tons of plates and shapes, have been placed with the leading interest. An order has also been booked for about 1200 tons for a tanker to be built on the Coast. A local railroad is inquiring for 200 to 300 tons of plates for car repairs. The Willets & Patterson Co., San Francisco, is in the market for 25 tank cars and the Korean Colonial Government is inquiring for a number of Mikado type locomotives. The Chicago Short Line Railway has bought a switch engine from the American Locomotive Co. and the Chino Copper Co., Hurley, New Mex., has purchased three saddle tank engines from the same builder. Plate mill operations have been adversely affected by labor troubles. The strike of railroad shop men has already forced the leading interest to close one of its plate mills and if a settlement is not effected soon other mills will be forced to close. The leading independent has booked sufficient tonnage to keep its mill operating until the end of the year.

The mill quotation is 2.65c., Pittsburgh, the freight to Chicago being 27c. per 100 lb. Jobbers quote 3.67c. for plates out of stock.

Sheets.—Mills are sold up on all material they can roll for several months, one of them being out of the market for the remainder of the year. The leading indeptndent is no longer quoting black or galvanized, but can still take orders for blue annealed for November delivery. Several independent interests selling in this district have advanced prices $2 a ton on black and $4 on galvanized. There is a big export demand, particularly from Japan and South America, but little of this business is being closed.

Mill quotations are 4.35c. for No. 28 black, 3.55c. for No. 10 blue annealed, and 5.70c. for No. 28 galvanized.

Jobbers quote Chicago delivery out of stock; No. 10 blue annealed, 4.57c.; No. 28 black, 5.62c., and No. 28 galvanized 6.97c.

Wire Products.—Demand continues strong, but the leading interest has not yet raised its prices in conformity with the advances by the independent mills. It is sold up for several months ahead, and has taken no action regarding prices because it is not seeking business. Jobbers have advanced wire nails to $4.15 a keg, or 25c. above the previous quotation. For mill prices see finished iron and steel, f.o.b. Pittsburgh, page 407.

Rails and Track Supplies.—The railroads are buying track fastenings more freely than any time since the first of the year. Individual orders, however, are small. Although there have been no additional orders for rails from the Railroad Administration, industrial manufacturers and mine railroads and independent common carriers have been ordering their requirements. Although individually these purchases are not large, in the aggregate they represent an encouraging tonnage. The demand for light rails is rapidly improving. The leading interest is now considering five contracts calling for from 500 to 1000 tons each. Most of these inquiries are from mines.

Standard railroad spikes, 3.35c. Pittsburgh. Track bolts with square nuts, 4.35c. Pittsburgh. Steel tie plates and iron angle bars, 2.75c. Pittsburgh and Chicago; tie plates, iron, 2.50c., f.o.b. makers' mills. Light rails, 2.45c. f.o.b. makers' mills with usual extras.

Bolts and Nuts.—Large structural and boiler rivets have been advanced $4 a ton while smaller size bolts and some grades of nuts have gone up from 5 to 10 per cent. Hot pressed and cold punched nuts remain unchanged. Demand continues heavier, with most mills sold up several months ahead. One local railroad is in the market for 500 tons of large structural rivets and another Chicago line is inquiring for three million bolts and nuts. Mill quotations for delivery in this territory are as follows:

Large structural and ship rivets	$3.90 base
Large boiler rivets	$4.00
¼ in., 5/16 in. and 7/16 in. diam.	60-5 per cent off list
Machine bolts, hp. nuts, ⅜ in. x 4 in.:	
Smaller and shorter, rolled threads	60 per cent off list
Cut threads	50-10 per cent off list
Larger and longer sizes	45-5 per cent off list
Machine bolts, c.p.c. and t. nuts, ⅜ in. x 4 in.:	
Smaller and shorter	40-10-5 per cent off list
Larger and longer	40 per cent off list
Carriage bolts, ⅜ in. x 6 in.:	
Smaller and shorter, rolled threads	50-10 per cent off list
Cut threads	50 per cent off list
Larger and longer sizes	40-5 per cent off list
Lag bolts	60 per cent off list
Plow bolts, Nos. 1, 2 and 3	50-5 per cent off list
Hot pressed nuts, sq. blank	3.10c. per lb. off list
Hot pressed nuts, hex. blank	3.10c. per lb. off list
Hot pressed nuts, sq. tapped	2.85c. per lb. off list
Hot pressed nuts, hex. tapped	2.85c. per lb. off list
C.p.c. and t. sq. and hex. nuts, blank	3.10c. per lb. off list
C.p.c. and t. sq. and hex. nuts, tapped	2.85c. per lb. off list
Semi-finished hex. nuts:	
⅝ in. and larger	70 per cent off list
9/16 in. and smaller	75-10 per cent off list
Stove bolts in packages	75-10 per cent off list
Stove bolts in bulk	75-10-2½ per cent off list
Tire bolts	60-10 per cent off list

The above discounts are from Aug. 4, 1919.

All prices carry standard extras, Pittsburgh basis.

Jobbers quote:

Structural rivets, 4.72c.; boiler rivets, 4.82c.; machine bolts up to ⅞ x 4 in., 50 and 5 per cent off; larger sizes, 40 and 5 off; carriage bolts up to ⅞ x 6 in., 45 and 5 off; larger sizes, 35 and 10 off; hot pressed nuts, square tapped and hexagon tapped, $2 off; coach or lag screws, gimlet points, square heads, 50 and 5 per cent off. Quantity extras for nuts are cancelled.

Old Material.—There have been fewer advances in the past week than for some time. Dealers, however, are still confident that considerably higher prices will obtain before the advance stops. A large consumer is in the market for a considerable tonnage of heavy melting steel and is reported to be willing to pay $22 per gross ton. About 4000 tons of shell scrap was recently sold to acid open-hearth steel foundries. In general, however, there has been little activity on the part of consumers. The bids on the 15,000-ton lot of shell forging billets published in this paragraph a week ago have been rejected by the Government. On Aug. 7 the Ordnance Department will receive tenders on 180 tons of steel bars and on the following day will take bids on 3100 tons of gothic steel billets. The Union Pacific is offering 3000 tons of which 1000 is rails; the St. Paul 400 tons; the Baltimore & Ohio, 50 tons and the Elgin, Joliet & Eastern, three cars of material.

Per Gross Ton

We quote delivery in buyers' yards, Chicago and vicinity, all freight and transfer charges paid, as follows:

Iron rails	$26.00 to $27.00
Relaying rails	35.00 to 45.00
Carwheels	26.00 to 27.00
Steel rails, rerolling	31.00 to 32.00
Steel rails, less than 3 ft.	24.50 to 25.00
Heavy melting steel	21.00 to 22.00
Frogs, switches and guards cut apart	21.00 to 22.00
Shoveling steel	21.00 to 21.50

Per Net Ton

Iron angles and splice bars	$24.50 to $25.50
Steel angle bars	21.00 to 21.50
Iron arch bars and transoms	27.00 to 28.00
Iron car axles	29.50 to 30.50
Steel car axles	27.50 to 28.00
No. 1 busheling	18.00 to 18.50
No. 2 busheling	13.50 to 14.00
Cut forge	20.00 to 20.50
Pipes and flues	16.75 to 17.25
No. 1 railroad wrought	21.00 to 22.00
No. 2 railroad wrought	20.00 to 20.50
Steel knuckles and couplers	21.00 to 21.50
Coil springs	22.50 to 23.00
No. 1 cast	24.00 to 25.00
Boiler punchings	23.00 to 23.50
Locomotive tires, smooth	23.50 to 24.00
Machine shop turnings	10.50 to 11.00
Cast borings	12.25 to 13.25
Stove plate and light cast	21.50 to 23.50
Grate bars	21.00 to 21.50
Brake shoes	20.00 to 21.00
Railroad malleable	20.00 to 21.00
Agricultural malleable	19.50 to 20.50
Country mixed	17.00 to 18.00

Cast-Iron Pipe.—Pipe shops have sufficient business to warrant increased operation, which, however, is diffi-

cult to effect on account of the scarcity of labor. The United States Cast Iron Pipe & Foundry Co. is low bidder on 1213 tons to be purchased by Akron, Ohio. Ashland, Ky., rejected all bids on 150 tons and will receive revised tenders on Aug. 18. Recent awards include:

Portsmouth, Ohio, 344 tons, to American Cast Iron Pipe Co.

Clarinda, Iowa, 212 tons, to United States Cast Iron Pipe & Foundry Co.

St. Cloud, Minn., 400 tons, to United States Cast Iron Pipe & Foundry Co.

We quote per net ton, f.o.b. Chicago, ex-war tax, as follows: Water pipe, 4-in., $56.30; 6-in. and larger, $53.80; class A and gas pipe, $1 extra.

Philadelphia

PHILADELPHIA, Aug. 5.

Slight gains in steel business are reported, but generally the market is about holding its own, the improvement of recent weeks being maintained without broadening to any marked degree. For mid-summer this is all that might be expected, and conditions are better in many respects than usual at this season. In plates and shapes there is a gradual improvement. Last week's sales of plates by one Eastern producer were the largest for any week this year, though the tonnage was by no means important. Plate mill operations range somewhere between 30 and 50 per cent, but better than this is being done at most of the shape mills. Sales of structural shapes by one company during the past two weeks have been equal to the capacity of its mills.

Export business is showing gains and may be further stimulated by reductions in ocean freight rates to the United Kingdom by the conference lines, shipping space for pig iron and semi-finished steel now being offered at $12, while the new rate on finished material is $13. The United States Shipping Board has announced no change. A local steel export company has booked about 4500 tons of plates and 4000 tons of shapes for Japan and 5000 tons of plates, shapes and bars for France. All of this steel is for construction of ships. Another lot of 10,000 tons of ship steel for export to Japan is under negotiation and probably will be closed this week. With the exception of wire products, export prices on steel products are holding at the domestic price level.

Warehouses have advanced prices $5 a ton, the new prices being $20 a ton above the Pittsburgh prices, plus the freight, except on hoops and bands, on which the advance is to $25 a ton above Pittsburgh mill prices. These prices became effective Aug. 1. Prior to the war the differential above mill prices was generally $10 a ton; during the war it was $20 or more, while lately it has been held at $15. Warehouses are not handling as large tonnages as formerly and the overhead costs per ton are declared to be advancing.

Almost a runaway market on old material is in evidence. Much higher prices are being quoted than a week ago, due largely to buying in the Pittsburgh district at prices above those which Eastern mills are willing to pay. Advances on some grades of scrap are $1 to $2 a ton.

Ore.—A shipment of 6245 tons of low phosphorus iron ore from Spain was received at this port last week; also a shipment of 2725 tons of manganese ore from Costa Rica.

Pig Iron.—A fair demand for foundry grades continues, but the market has been somewhat quiet during the past week. The tendency of prices is toward firmness. One seller is quoting $28 on No. 2 plain and $29 on No. 2X, furnace, with a freight rate of 60c., while another seller with a freight rate of $1.10 is quoting $27.50 on No. 2 plain and $28.50 on No. 2X, making the delivered prices from both furnaces $28.60 and $29.60 for the two grades. This appears to be about the bottom, except that on one sale of 10,000 tons from an Eastern Pennsylvania furnace a price of $27.50, furnace, was made on No. 2X iron. Some sellers are quoting higher prices, a leading Lehigh Valley interest asking $29 for No. 2 plain and $30 for No. 2X, at furnace. While most of the Virginia makers are virtually out of the market, a Virginia furnace has sold on the basis of $26.75 for No. 2 plain and $28, furnace, for No. 2X, the freight rate to Philadelphia being $4.10. Some furnaces in Virginia are asking $30 or $31 for either No. 2 plain or No. 2X at furnace. A recent sale of 6000 tons of low phosphorus iron was at $35, furnace, but the seller has now raised the price to $38. Copper bearing iron is still obtainable at $35, furnace. There have been no important sales of basic during the past week, but $26, furnace, could still be done on a limited tonnage, though $27 would be asked on a large tonnage for extended delivery. Inquiries include one for about 1000 tons of foundry from a Delaware River shipbuilder and another for 500 to 1000 tons from a Philadelphia foundry. In the latter inquiry delivery is wanted in the last quarter and first half of next year. Very little first half business has been done, as furnacemen are not generally willing to commit themselves that far ahead. We quote standard grades of iron for delivery in the Philadelphia district as follows, except that low phosphorus iron is quoted f.o.b. furnace:

Eastern Penna. No. 2 X, 2.25 to 2.75 sil.	$29.60 to $31.10
Eastern Penna. No. 2 plain, 1.75 to 2.25 sil.	28.60 to 30.10
Virginia No. 2 X, 2.25 to 2.75 sil.	32.10
Virginia No. 2 plain, 1.75 to 2.25 sil.	30.85
Basic	20.60 to 27.10
Gray forge	26.60
Malleable	(nominal) 28.35
Standard low phosphorus (f.o.b. furnace)	35.00
Copper bearing low phosphorus (f.o.b. furnace)	35.00

Ferroalloys.—British makers of ferromanganese have made some small sales, principally carload lots, at $105, seaboard. Domestic producers are quoting $115, delivered, but $110 or less can quite easily be done. The policy of domestic producers is to meet the British price whenever desirable business is offered. There is an active agitation for an import duty on ferromanganese, and the matter probably will come before Congress for action soon. One bill provides for a 25 per cent ad valorem tax; another for a specific duty of $25 a ton. The Lavino Furnace Co. has blown in the Oriskany furnace on ferromanganese, this being the only active ferromanganese operation of that company. The Leesport furnace will make a few hundred tons of ferromanganese this week and then go on foundry iron. Spiegeleisen is not active, but small sales have been made at $33, furnace, for the 18 to 20 per cent.

Semi-Finished Steel.—With the demand for finished steel showing improvement, some steel companies are not over-anxious to sell semi-finished steel, in which they see a smaller profit than on finished material. We quote open hearth rerolling billets at $42.50; forging billets at $55 and slabs at $45, all delivered Philadelphia.

Plates.—Some improvement is noted in bookings of plate tonnages, but mill operations in the East are still at a low rate, ranging from 30 to 50 per cent. Contracts for ships recently let, which will require about 25,000 tons of plates and shapes, will help out the market within the near future. The Baldwin Locomotive Works is about to receive a contract for 150 locomotives for Poland, all details except the financial arrangements having been completed, it is understood. The Pennsylvania Railroad's purchases of plates for car repairs totalled 6000 to 8000 tons. Some of this business came to a local mill, but the most went to the Pittsburgh and Buffalo districts. A local steel export company has booked about 4500 tons of plates for Japan and has 10,000 tons of plates and shapes under negotiation, which will probably be closed this week. A few of the Youngstown and Pittsburgh companies are fairly well off as to plate business, but this is not the situation with Eastern mills. Although sales have been made for some time past at 2.50c. and 2.55c., Pittsburgh, there is now said to be little, if any, price cutting. In accepting contracts for foreign ships American shipbuilders are now required by the Shipping Board to use surplus steel of the Emergency Fleet Corporation when such can be adapted to the ships to be built, the Shipping Board making prices on this steel as favorable as can be obtained from the mills. We quote 2.895c., Philadelphia, on sheared plates, ¼-in. and heavier.

Structural Material.—A local steel company has sold a quantity of shapes in the past two weeks equal to its rolling capacity, this being the first time this year that this volume of business has been reached. Much of the business came from the Central West. An increasing amount of business is coming to all of the shape mills, but some of them could do considerably more. An Eastern shape mill has received through an export company an order for 4000 tons of ship shapes for Japan. Fabricators are making contracts more freely and are specifying against old contracts with more regularity. We quote plain material at 2.695c., Philadelphia.

Bars.—A Pennsylvania mill is quoting from four to eight weeks deliveries on steel bars; some sellers are sold up farther ahead than this. Bar iron is quiet. We quote soft steel bars at 2.595c. and bar iron at 2.745c., Philadelphia. Double refined bar iron is 1c. a lb. higher.

Sheets.—A fair business is being done in this territory in sheets but Eastern mills are by no means filled up, as are some of the mills in the Pittsburgh-Youngstown district. Prices are reported to be firmer. Exporters say that concessions which were freely given a few weeks ago are being withdrawn. We quote Philadelphia delivered prices as follows: No. 10 blue annealed, 3.795c.; No. 28 black, 4.595c.; No. 28 galvanized, 5.945c.

Light Rails.—There is a good demand for light rails from mines and industrial companies. We quote 2.695c., Philadelphia, though concessions from this price are occasionally being made.

Old Material.—Prices have been run up so rapidly that $25 for No. 1 heavy melting steel is now freely predicted by scrap dealers. Eastern mills, in many instances, will not pay the prices demanded by dealers, but the Pittsburgh district plants are buying freely, and at prices so much higher than are to be had in eastern Pennsylvania that considerable scrap is moving from the East to that district. Local dealers have paid around $20 for No. 1 melting steel to fill $30 orders from a local steel company, these orders having been suspended at the time of the signing of the armistice. The steel company attempted to cancel, but the dealers insisted on the contracts being carried out. The steel was sold last fall at the Government price, $29, plus a commission of 3½ per cent. Price advances from a week ago range from 50c. to $3 a ton. On some grades these do not represent actual transactions in this district, but the quotations represent what is being paid in the Pittsburgh district, with the difference in freight rates taken into consideration, and it is doubtful if consumers in the East could now buy below these prices, while in some cases more will undoubtedly be paid if the material is badly needed. Bids received by the Pennsylvania Railroad on its August list were an indication of the trend of the market. These bids were in many instances much higher than had been done on recent transactions in this district. We note sales of No. 1 heavy melting steel at $20; 1500 tons of No. 1 railroad wrought at $27.50, while scattered sales of other items have been made at advances over the prices quoted a week ago. We quote for delivery at consumers' works eastern Pennsylvania as follows:

No. 1 heavy melting steel	$20.00 to $21.00
Steel rails, rerolling	25.00 to 26.00
No. 1 low phosphorus, heavy, 0.04 and under	24.50 to 26.00
Carwheels	24.50 to 26.00
No. 1 railroad wrought	26.50 to 27.50
No. 1 yard wrought	23.00 to 24.00
No. 1 forge fire	15.00 to 16.00
Bundled skeleton	15.00 to 16.00
No. 1 busheling	16.00 to 17.00
No. 2 busheling	13.00 to 14.00
Turnings (short shoveling grade for blast furnace use)	14.50 to 15.50
Mixed borings and turnings (for blast furnace use)	13.00 to 14.00
Machine-shop turnings (for rolling mill and steel works use)	15.00 to 15.50
Heavy axle turnings (or equivalent)	16.50 to 17.00
Cast borings (clean)	14.50 to 15.00
No. 1 cast	24.00 to 25.00
Grate bars	20.00 to 21.00
Stove plate	20.00 to 21.00
Railroad malleable	20.00 to 21.00
Wrought iron and soft steel pipes and tubes (new specifications)	20.00 to 21.00
Ungraded pipe	15.00 to 16.00

Birmingham

BIRMINGHAM, Aug. 4.

Pig Iron.—August entered with the $26.75 basis for 1.75 to 2.25 silicon, and the silicon differentials so strongly maintained and with the inquiry so active that higher levels seemed imminent. These prices on small lots were secured: $32.75 for 3 per cent silicon, 0.05 sulphur, 0.40 to 0.70 phosphorus and 1 per cent manganese, with $33 for the same sulphur and phosphorus and slightly more silicon and manganese. A round lot of 10,000 tons went to the Chicago district at $27 for 1.75 to 2.25 silicon and $28 for 2.25 to 2.75 silicon. An Evansville, Ind., concern took 2000 tons. Lots varying from carloads to 500 and 1500 and 2000 tons were booked in Ohio, Illinois, Indiana, St. Louis district and Chicago territory. Boston and San Francisco made small bookings. A feature of the market continues to be the large amount that is being placed in the Middle West at full differentials. That territory came in strong around the middle of July and has bought in quantities. Two interests claim to be out of the market temporarily and none are pressing sales. All expect to follow the lead of Chicago in advancing for 1920, or rather before that time. One interest expresses confidence in being able to book for fourth quarter at $27.50. Some upward move seems certain and near at hand. The Woodstock and Sheffield Iron Corporation ought to resume making iron on the next advance and Jenifer is also reported as ready to start with encouraging price conditions. The Shelby charcoal stack is scheduled for early resumption. We quote per gross ton, f.o.b. Birmingham district furnaces, prices to consumers as follows:

Foundry, silicon 1.75 to 2.25	$26.75
Basic	25.75

Cast Iron Pipe.—Sanitary as well as gas and water pipe concerns report satisfactory increment of new business. Sanitary pipe is going direct into consumption. North and South Carolina and Georgia towns are ordering quantities of water and gas pipe.

Coal and Coke.—Coal production still lags. Coke is strong at $9 for the good foundry makes with very little spot obtainable. The Alabama house finally voted a 2c. tax on coal and one of 3c. on ore mined. The original coal tax was 5c. The senate has yet to act and great pressure is being brought to bear against the measure.

Old Material.—The Birmingham scrap market has been featured by a remarkable deadlock, with dealers apparently unable to budge the heavy steel consumers. Cast is the only material that moves in quantities. We quote per gross ton, f.o.b. Birmingham district yards, prices to consumers as follows:

Steel rails	$14.50 to $15.00
No. 1 heavy steel	14.00 to 14.50
Cast iron borings	9.00 to 10.00
Machine-shop turnings	9.00 to 10.00
Stove plate	17.00 to 18.00
No. 1 cast	22.00 to 22.50
Car wheels	22.00 to 22.50
Tramcar wheels	21.50 to 22.00
Steel axles	22.00 to 23.00
No. 1 wrought	14.00 to 15.00

Buffalo

BUFFALO, Aug. 4.

Pig Iron.—One of the largest producers in the Buffalo district has advanced prices for foundry grades and malleable and is now quoting No. 2X, 2.25 to 2.75 silicon, at $29 at furnace; No. 2 plain foundry, 1.75 to 2.25 silicon at $28; gray forge at $27.50 and malleable at $29, with proportionate increase in prices for the higher silicon grades. These prices apply for shipment over the remainder of the year and also for such tonnage as the producer may care to take on for 1920. This interest has a well filled order book for this year and is not keen for the closing for 1920 shipment, but is consummating some sales at its new scale of prices. So far as reported other producers have not increased prices except in a few isolated instances on special grades. Two interests are out of the market for this year and are not quoting at all for the next year. One of these interests is, however, deliberating with regard to opening its books at an early date for 1920 tonnage.

In general the market is strong and inquiry is coming in steadily for good-sized lots, including one of 4000 tons and one of 2000 tons of foundry. With the increase in price by the seller above mentioned the spread of the price schedule is considerably widened. We quote as follows, f.o.b. furnace, Buffalo:

No. 1 foundry, 2.75 to 3.25 silicon	$29.75 to $30.00
No. 2 X, 2.25 to 2.75 silicon	28.00 to 29.00
No. 2 plain foundry, 1.75 to 2.25 silicon	26.25 to 28.00
Gray forge	25.75 to 27.50
Malleable, silicon not over 2.25	27.25 to 29.00
Basic	25.75
Basic, 1 to 1½ per cent manganese	26.25
Basic, 1½ to 2½ per cent manganese	26.75
Bessemer	27.95
Lake Superior charcoal, regular grades, f.o.b. Buffalo	32.35

Finished Iron and Steel.—Demand for the heavier lines has been somewhat less than for the preceding week, but specification for merchant bars has been very good and the demand for wire products continues to be exceedingly large. Buyers are having difficulty in placing orders because mills are unable to operate at full capacity because of labor shortage. Contracts calling for monthly quotas have been pretty generally specified for July and there have been very few cancellations. Selling agencies report that large orders for tubular goods and most mills are running three to five months behind on lapweld sizes. Canadian trade has not been so active as for two or three weeks past, although crop prospects are brighter in the Northwest on account of rains. The John W. Cowper Co., Inc., Buffalo, will supply 900 tons of fabricated steel for the Pittsburgh Gauge & Supply Co. and 100 tons reinforcing material for the Harrison Radiator Corporation, Lockport, N. Y.

Prices f.o.b. Buffalo are as follows: Steel bars, 3.40½c.; iron bars, 4.10½c.; shapes, 3.50½c.; plates, 3.70½c.; No. 10 blue annealed sheets, 4.60½c.; No. 28 black, 5.65½c.; No. 28 galvanized sheets, 7.00½c. For "store door delivery" add 0.04½c. to each commodity.

Old Material.—The market is active and good business has been done in heavy melting steel, machine shop turnings, cast borings and stove plate, with considerable demand for No. 1 machinery scrap and No. 1 railroad wrought iron. No. 1 machinery cast is now commanding $24.50 to $25.50, an advance of $2, and No. 1 railroad wrought $23 to $23.50, an advance of $1.50 to $2 per ton. Heavy melting steel is selling to Valley mills and other outside points at approximately $22.50, which is equivalent to $20, Buffalo. Local mills decline to become interested at a figure over $18.50, not at least until they are operating to a fuller percentage of capacity. Consequently local transactions in this commodity have been limited. We quote dealers asking prices, per gross ton, f.o.b. Buffalo, as follows:

Heavy melting steel, regular grades	$18.00 to $18.50
Low phosphorus, 0.04 and under	22.00 to 23.00
No. 1 railroad wrought	23.00 to 23.50
No. 1 machinery cast	24.50 to 25.50
Iron axles	26.00 to 27.00
Steel axles	26.00 to 27.00
Carwheels	22.50 to 23.50
Railroad malleable	19.00 to 20.00
Machine-shop turnings	10.00 to 12.00
Heavy axle turnings	15.00 to 16.00
Clean cast borings	13.00 to 14.00
Iron rails	23.00 to 24.00
Locomotive grate bars	19.00 to 20.00
Stove plate	21.00 to 22.00
Wrought pipe	16.00 to 17.00
No. 1 busheling	15.00 to 16.00
Bundled sheet stamping	13.00 to 14.00

Boston

BOSTON, Aug. 5.

Pig Iron.—Foundry iron is selling in some cases at higher than $28, furnace, at least for fourth quarter delivery, sales being known at $28.50. Though furnaces are very reluctant to book orders for 1920, such is being done quietly to satisfy old customers. In one instance a consumer asking for 1920 prices was quoted $29.75 for No. 2 X (silicon 2.25 to 2.75 per cent) at furnace, but did not place an order. Sales are increasing in volume as well as in price. One Boston agent last week sold 1800 tons of No. 1 X (silicon 2.75 to 3.25) to a western Massachusetts consumer. We quote, delivered to New England points: Eastern Pa. No. 2 X (silicon 2.25 to 2.75) $30.90; Eastern Pa. No. 2 plain (silicon 1.75 to 2.25), $29.90; Buffalo No. 2 X (silicon 2.25 to 2.75), $31.90; Buffalo No. 2 plain (silicon 1.75 to 2.25) $30.90; Virginia No. 2 X (silicon 2.25 to 2.75) $32.70; Virginia No. 2 plain (silicon 1.75 to 2.25) $31.45.

Old Material.—The chief activity seems to be in borings and turnings, both as to amount sold and increase in price. One firm sold 4500 tons in two days of last week to the Pittsburgh district and the price has advanced about 75c. over last week. Since Eastern Pennsylvania consumers are not buying appreciably, most of the steel scrap is being shipped to the West. Machinery cast appears rather difficult to get to satisfy the demand of New England foundries. The Boston district ordnance office sold the following scrap and semi-finished steel last week: To the American Metal Co., Philadelphia, 71 gross tons 1½-in. round cold rolled steel at the Worcester Shock Absorber Co., at $37.18; 139 net tons 3¾-in. cold drawn Bessemer screw stock at the New Home Sewing Machine Co., Orange, Mass. at $30.10 per net ton; 57½ net tons 1 11/16-in. hexagon cold rolled Bessemer screw stock, at the Taft Peirce Mfg. Co., Woonsocket, R. I. at $34 per net ton. To Luria Bros. & Co., Reading, Pa., 900 gross tons of 75-mm. rough steel forgings and steel shells in process (ready for the copper bands) at the S. A. Woods Machine Co., South Boston, Mass. at $19.37 per gross ton; 711 gross tons 155-mm. shell forgings in preliminary machining operations at the New Home Sewing Machine Co., Orange, Mass., at $20.50 per gross ton. To H. Cohen & Co., Chelsea, Mass., 500 tons malleable iron castings for 3-in Stokes trench mortars at the Gorham Mfg. Co., Providence, at $18.26. Dealers' buying prices, Boston, follow:

No. 1 heavy melting steel	$14.50 to $15.00
No. 1 railroad wrought	19.00 to 19.50
No. 1 yard wrought	17.00 to 17.50
Wrought pipe (1 in. in diam., over 2 ft. long)	15.00 to 15.50
Machine shop turnings	10.00 to 10.50
Cast iron borings	10.00 to 10.50
Heavy alxe turnings	10.00 to 10.50
Blast furnace borings and turnings	8.50 to 9.00
Forge scrap	10.50 to 11.00
Bundled skeleton	10.50 to 11.00
Steel car axles	21.00 to 21.50
Carwheels	24.50 to 25.00
Machinery cast	23.50 to 24.00
No. 2 cast	20.00 to 21.00
Stove plate	18.50 to 19.00
Railroad malleable	17.50 to 18.00

St. Louis

ST. LOUIS, Aug. 5.

Local foundries continue to buy pig iron freely, but the furnaces will book only third and last quarter. Heavy buying is expected when books open for the first quarter. A Southern furnace has advanced its quotations to $34.05 delivered, St. Louis. A local furnace price is up $2 to $30, St. Louis. A large basic consumer entered the market to-day for 10,000 tons, delivery this year. An inquiry for 1000 tons of Northern made by a local consumer was turned down because the furnace was unable to deliver. Finished material buying is steadily improving. As a result of an amendment to the St. Louis building zone law there will be released about $6,000,000 of building permits. The scrap market slumped sharply on news of threatened railroad strikes. Dealers scrambled to get out from under. Railroad lists therefore went at low prices, the quotations being from $1.50 to $2 per ton off from prices of yesterday.

Pig Iron.—Buying grows in aggregate volume. The purchases mostly run from 100 to 500 tons and through the last quarter, with practically nothing for the first quarter or half next year. The attitude of the furnaces in the present uncertain state of costs is definitely against commitments that run far ahead. Gray-iron and malleable foundries, together with the stove makers, are taking the iron which is being bought.

Finished Iron and Steel.—Finished products continue in better demand, although no large structural contracts are being entered. The aggregate, however, is satisfactory to the mill representatives who report

deliveries beginning to lengthen, though this is in part due to the fact that mills are not working up to capacity. Movement out of warehouse is satisfactory in volume, in fact as large as can be comfortably handled at present. For stock out of warehouses we quote as follows:

Old Material.—The dealers are continuing their speculative activity. The larger scrap dealers, while making purchases, are disposed to sell whenever a profit shows rather than hold for a longer margin. These dealers have taken care of their large contracts and are practically even with the market in this respect. Lists from the railroads are due this week and the prices at which they go will be interesting in their bearing on the situation here. Local consumers are buying very little, although there have been some small nibbles from this direction during the past week. Most of the large users are closed down, or nearly so, and therefore would be likely to take only bargain lots against the future—and there do not appear to be any bargains in the market. We quote dealers' prices, f.o.b. customers' works, St. Louis industrial district, as follows:

Per Gross Ton

Old iron rails	$21.50 to $22.00
Old steel rails, rerolling	27.00 to 27.50
Old steel rails, less than 3 ft	22.00 to 22.50
Relaying rails, standard sections, subject to inspection	38.00 to 40.00
Old carwheels	23.00 to 23.50
No. 1 railroad heavy melting steel	19.00 to 19.50
Heavy shoveling steel	17.00 to 17.50
Ordinary shoveling steel	16.00 to 16.50
Frogs, switches and guards, cut apart	19.00 to 19.50
Ordinary bundled sheets	10.00 to 10.50
Heavy axle and tire turnings	12.50 to 13.00

Per Net Ton

Iron axle bars	$19.50 to $20.00
Steel angle bars	17.00 to 17.50
Iron car axles	31.50 to 32.00
Steel car axles	27.50 to 28.00
Wrought arch bars and transoms	22.50 to 23.00
No. 1 railroad wrought	18.00 to 18.50
No. 2 railroad wrought	17.00 to 17.50
Railroad springs	17.50 to 18.00
Steel couplers and knuckles	16.50 to 17.00
Locomotive tires, 42 in. and over, smooth inside	19.50 to 20.00
No. 1 dealers' forge	16.00 to 16.50
Cast iron borings	9.50 to 10.00
No. 1 busheling	15.50 to 16.00
No. 1 boiler cut to sheets and rings	14.50 to 15.00
No. 1 railroad cast	23.00 to 23.50
Stove plate and light cast	19.00 to 19.50
Railroad malleable	15.50 to 16.00
Agricultural malleable	15.50 to 16.00
Pipes and flues	15.50 to 16.00
Heavy railroad sheet and tank	14.50 to 15.00
Railroad grate bars	17.00 to 17.50
Machine shop turnings	10.00 to 10.50
Country mixed	13.00 to 13.50
Uncut railroad mixed	15.00 to 15.50
Horseshoes	19.50 to 20.00

New York

NEW YORK, Aug. 5.

Pig Iron.—Although there are quite a number of inquiries in the market for the first half of 1920, furnacemen are reluctant to quote for that delivery owing to uncertainty as to the fuel situation. There are two large inquiries out from merchant furnaces for coke for this year and first half of next year, but the coke producers are likewise hesitant about making commitments for next year on a flat price basis on account of the labor situation. Until blast furnaces can cover for their coke and know what their costs will be, they are not anxious to sell that far ahead. Some furnaces are making no quotations whatever for next year shipment. As for the remainder of this year, the tendency of prices is higher, and the schedule of March 21 has now been left far behind by some producers. For example, a leading Buffalo interest now quotes $28 for 1.75 to 2.25 per cent silicon iron; $29 for 2.25 to 2.75 per cent silicon, and $30 for 2.75 to 3.25 per cent silicon for shipment any time this year, all f. o. b. furnace, to which must be added a $3.90 rail freight rate to New York. A Lehigh Valley producer quotes $1 a ton higher than these prices at furnace, and has sold several thousand tons of iron at the advance. One of the Southern interests has advanced its prices f. o. b. furnace as follows: 1.75 to 2.25 per cent silicon, $27.50; 2.25 to 2.75 per cent silicon, $28.60; 2.75 to 3.25 per cent, $29.75; 3.25 to 3.75 per cent, $30.95. Obviously, these prices are prohibitive so far as Northern consumers are concerned. Malleable iron is now quoted at $29, furnace, by one Buffalo furnace, and probably not less than $28, furnace, could be done anywhere in the East, though so little malleable inquiry has been sent out that the market has not fairly been tested. The leading maker of charcoal iron has withdrawn from the market. Some business has been closed during the past week, but as a whole the market has been quiet. There has been a demand for small lots for quick shipment and some small export sales. Export inquiries total perhaps 50,000 tons, but much of this may never be closed in the belief of pig-iron sellers. We quote as follows, delivered New York, Northern and Southern grades, prices on the latter having advanced to the f. o. b. furnace price plus freight, as Southern sellers are virtually out of the Northern market.

No. 1 foundry, silicon, 2.75 to 3.25	$30.80 to $32.80
No. 2 X, silicon, 2.25 to 2.75	30.30 to 31.80
No. 2 plain, silicon, 1.75 to 2.25	29.80 to 30.80
No. 2 X, Virginia, silicon, 2.25 to 2.75	32.40 to 35.40
No. 1 Southern, silicon, 2.75 to 3.25	36.75
No. 2 Southern, soft (all rail), sil., 2.25 to 2.75	35.00
No. 2 Southern (all rail), sil., 1.75 to 2.25	33.75

Ferroalloys.—In no direction is much business reported as being done locally in ferromanganese. The quotation of the foreign makers is $105, c.i.f., against $110 to $115, delivered, for the domestic product, but it is pointed out that the foreign material runs 76 to 80 per cent manganese, while the domestic range is 78 to 82 per cent. The domestic makers allow freight to points east of the Mississippi River and north of the Ohio River. Spiegeleisen is quiet, 18 to 22 per cent being strong at $35, furnace, and 16 to 18 per cent equally firm at $33, furnace. Fifty per cent ferrosilicon is stronger, $80 to $85, delivered, being quoted for carloads, there having been a little activity. Bessemer ferrosilicon has been fairly active, the labor troubles in Jackson County, Ohio, causing consumers to seek to replenish their supply. Ferrochrome has been more active in carload lots, several hundred tons having been taken on the basis of 30c. to 32c. per lb. of contained chromium, the carbon content being 6 to 8 per cent. Ferrovanadium is quoted at $6 per lb. of contained vanadium in wholesale lots for early delivery. Ferrocarbon titanium, 15 to 18 per cent., is quoted at $200 per net ton in carload lots, at $220 per ton in lots between one ton and a carload, and at $250 per ton in lots less than a ton, f.o.b. Suspension Bridge, N. Y.

Finished Iron and Steel.—The large amount of buying which has been going on in bars is still a feature with many of the mills out of the market for the third quarter and not interested in considering business for the last quarter. From a few of the small mills having a limited range of sizes prompt deliveries are obtainable, but usually at a little advance over the recognized market price. Shading in plates has not yet disappeared, and the interesting coincidence is that many of these sales, largely for relatively small amounts, are made to railroads. A small lot ten days ago went for 2.50c., Pittsburgh, but most carry a price of 2.55c. Plate mills are apparently willing to take on contracts for delivery through the remainder of the year. One such for several thousand tons has been closed by a fabricator at the prevailing price of 2.65c. Shipbuilding contracts seem slow in the consummation, and many of the options for plates have not yet been exercised. That the foreign demand in all lines is a factor is indicated by the estimate of one seller that in the last two months inquiry has been at a rate of 20 per cent of the country's capacity. More transactions would have been closed than have been were mills in a position to make deliveries required. Of course, some of the business offered is contingent on financing satisfactory to the mills. One of the big steel export companies, at this writing, has been unable to place an order for 15,000 tons of skelp. One of the largest items in the structural field covers

20,000 tons of fabricated steel work to be shipped to India for buildings for the Tata Iron & Steel Co. Bids close this week on 6000 tons for the dirigible hangar for the Navy at Lakehurst, N. J. French & Co., New York, have awarded to the Bethlehem Fabricators, Inc., Bethlehem, Pa., 1100 tons for an apartment building on West End Avenue. The past week has been quieter than preceding weeks in the amount of fabricated business placed. The New England Structural Co. has taken contracts including 560 tons for an 11-story office building for the Old State Corporation at the site of the Rogers Building, Washington Street, Boston; 300 tons for a reinforced concrete building for the National Spun Silk Co., New Bedford, Mass., and 200 tons of columns in a warehouse for the Quincy Market Cold Storage & Warehouse Co., Boston. The First National Bank, Boston, is to erect a new building which will include the site occupied by the Equitable Building, Milk Street. Bar iron business is unusually quiet, but a good business is being booked in bolts. Accordingly, we quote as follows: Mill shipments: Bar iron, refined grade, 2.77c.; double refined bar iron, 3.77c.; soft steel bars, 2.62c.; shapes, 2.72c.; plates, 2.92c.; all New York.

Warehouse Business.—Prices out of store have been increased $5 per ton on bars, plates and structural material and $10 on hoops and bands, except in the case of two leading interests, by whom no advances have been made as yet. Philadelphia jobbers have also revised prices, dealers' prices there having been increased to give a uniform spread of $20 per ton over the mill price, equivalent to $5 per ton advance on the recent quotations. Action was also taken in Philadelphia providing for billing warehouse shipments on a basis of Pittsburgh price plus freight to destination. This action practically eliminates the features of the equalization plan adopted July 14 by jobbers along the Atlantic seaboard. It is understood that Baltimore jobbers support the action taken in Philadephia. These conflicting developments, it is pointed out in some quarters, emphasize the need for a more uniform policy in warehousing. July business is on a par with June, slackness in the first half of the month being compensated by increased activity toward the end. We quote out-of-store prices as follows: No. 10 blue annealed sheets 4.57c.; No. 28 box annealed black sheets, 5.50c.; No. galvanized sheets, 6.75c. to 7.00c.; steel bars, 3.37c. to 3.62c.; structural shapes, 3.47c. to 3.72c.; plates, 3.67c. to 3.92c.; bands, 3/16-in. Nos. 10 and 12, 4.07c. to 4.57c.; shafting, net list.

Cast-Iron Pipe.—On Aug. 8 bids will be taken on 800 to 900 tons, chiefly of 6, 8 and 10-in. pipe for the Panama Canal, deliveries to be at Christobal. There is still irregularity in prices, even on lots of 50 to 100 tons. We accordingly quote New York prices as follows: 6-in. and heavier, $51 to $52.30; 4-in., $54 to $55.30; 3-in., $61 to $62.30 and $1 additional for Class A and gas pipe.

Old Material.—Pittsburgh prices are affecting the New York market to a large extent due to the fact that, outside of cast scrap consumed by local foundries, most of the old material is being shipped to the Pittsburgh district, only one important eastern Pennsylvania consumer buying at present. Accordingly, prices have experienced a rise in several items to keep pace with the Pittsburgh market. Some interests see trouble from two possible sources: One a topheaviness due to possible over-speculation, the other the recent railroad shopmen's strike in the West which threatens to tie up steel plants. These factors will cause prices to tumble, they say. Others point to the increasing operation of the mills and foundries, to the dwindling scrap piles of the consumers and to the comparative scarcity of scrap.

The following sales of material are reported by the New York district ordnance office for July. To David Kaufman & Sons Co., Elizabeth, N. J., about 3,500,000 lb. steel shells, mixed, at $22.68 per gross ton on ground; 2000 tons steel scrap at $19.77 per gross ton, f.o.b. cars; Josoph Joseph & Brothers Co., New York, about 7,000,000 lb., steel shells, mixed, at $16.315 per gross ton on ground; Frank Millner, Trenton, N. J., about 166,000 lb. cold rolled steel, $1.61 per 100 lb., f.o.b. cars; 816,000 lb. cold rolled steel at $35.10 gross ton, f.o.b. cars; F. R. Phillips & Sons Co., Philadelphia, about 1,500,000 lb. 2⅞-in. screw stock at $34 gross ton, f.o.b. cars. Prices which brokers and dealers are paying, New York, follow:

Old steel rails (or equivalent)	$16.50 to $17.00
Heavy melting steel	15.50 to 16.00
Rerolling rails	19.00 to 20.00
Relaying rails, nominal	41.00 to 42.00
Steel car axles	25.00 to 26.00
Iron car axles	29.00 to 30.00
No. 1 railroad wrought	22.00 to 23.00
Wrought iron track	16.00 to 17.00
Forge fire	10.50 to 11.00
No. 1 yard wrought, long	18.50 to 19.00
Light iron	6.00 to 7.00
Cast borings (clean)	10.50 to 11.00
Machine shop turnings	10.50 to 11.00
Mixed borings and turnings	9.00 to 9.50
Iron and steel pipe (1 in. min. diam., not under 2 ft. long)	16.00 to 16.50
Stove plate	17.50 to 18.00
Locomotive grate bars	17.00 to 17.50
Malleable cast (railroad)	15.00 to 16.00
Old car wheels	21.50 to 22.00

Prices which dealers in New York and Brooklyn are quoting to local foundries, per gross ton:

No 1 machinery cast	$23.50 to $24.50
No. 1 heavy cast (columns, building materials, etc.), cupola size	22.50 to 23.00
No. 1 heavy cast, not cupola size	16.00 to 16.50
No. 2 cast (radiators, cast boilers, etc.)	17.50 to 18.00

Cincinnati

CINCINNATI, Aug. 5.

Pig Iron.—The market opened somewhat dull this week, and sales have been cut down considerably in the past few days. In a measure this is due to a growing shortage of iron, especially in the South, although there is some foundry iron that can still be had for prompt shipment at $26.75 for 1.75 to 2.25 silicon, Birmingham basis. This available tonnage is very much limited. Several furnaces have already advanced their prices and some have no iron to offer. Last quarter iron is also very scarce, and in a few instances furnaces which could dispose of some metal for that delivery refuse to name any quotations. High phosphorus iron is almost unobtainable in the South, and just at the moment there seems to be a very urgent demand for it. Two inquiries from St. Louis territory call for a total of 20,000 tons of basic with shipments extending through the first quarter of next year. No one here has been able yet to quote on this business. Quite a number of small and medium-sized inquiries are out for first quarter foundry iron, but producers in both the South and Ironton districts have so far declined to name any quotations. However, it is rumored that some furnaces are considering opening their books soon for this delivery at an advance of $2 over present prices. High silicon iron is in urgent demand, as only one furnace in Jackson County is in operation, and this one is expected to blow out for repairs in the next few days. The three furnaces there closed down on account of labor troubles are still having difficulty in shipping from their yard stocks on old contracts. Reports from all districts indicate a growing car shortage that will doubtless become worse if railroad shops stay closed down any length of time.

Based on freight rates of $3.60 from Birmingham and $1.80 from Ironton, we quote f.o.b. Cincinnati:

Southern coke, silicon, 1.75 to 2.25 (base price)	$30.35
Southern coke, silicon, 2.25 to 2.75 (No. 2 soft)	31.60
Ohio silvery, 8 per cent silicon	42.05
Southern Ohio coke, silicon, 1.75 to 2.25 (No. 2)	28.55
Basic Northern	27.55
Standard Southern carwheel	51.60
Malleable	29.05
Lake Superior charcoal	$32.35 to 33.35

Finished material.—Local jobbing houses have advanced prices on machine and carriage bolts, lag screws and semi-finished nuts approximately 10 per cent. Although most of the mills have marked up nails 25c. per 100 lb., the local wholesale price remains at $3.75 per keg base, but an advance is scheduled to take place before the end of the present week. Both black and galvanized sheets are very much firmer, but the nearby

mills have not made any advances as has been reported from other sections. No. 28 black sheets are firm at 4.35c., Pittsburgh; No. 28 galvanized, 5.70c., with a freight rate of 23c. per 100 lb. to Cincinnati. Cold-rolled shafting is in fair demand and is unchanged at 5 per cent off list for outside shipments.

The following are present local jobbers' prices: Steel and iron bars, 3.33c. base; bands, 4.03c. base; structural shapes, 3.43c. base; plates, ¼-in. and heavier, 3.63c. base; No. 10 blue annealed sheets, 4.53c.; wire nails, $3.75 per keg base; machine bolts, smaller sizes, 50 and 5 per cent off list; larger sizes, 40 and 5 per cent. Semi-finished nuts, 9/16-in. and smaller, 75 and 10 per cent off list; soft steel rivets, 60 per cent off; wood screws, 80 and 10 per cent off, and coach screws, 50 and 10 per cent off list.

High Speed Steel.—Business has slowed down a little and all machine shops as a rule are only buying to fill their immediate requirements. Standard brands are unchanged at $1.50 per lb. base.

Fluorspar.—The market is passing through a dull period and there is practically no new contracting. However, there are now very few requests to hold up shipments on contracts. Washed gravel fluorspar remains at $25 per ton at point of shipment.

Coke.—Considerable difficulty is reported from different fields in obtaining a sufficient supply of labor. Production is said to have been cut down to some extent in the Wise County, Pocahontas and New River districts, and in a smaller degree in the Connellsville field. The first part of last week a little prompt Connellsville foundry coke was sold below the market price of $5.50 per net ton at oven. Some furnace coke was also disposed of below $4.25, but it is understood that the market has now recovered. Wise County and Pocahontas foundry coke is held from $7.00 to $7.50 per net ton at oven, and New River is unchanged at $8.00. A little foundry coke has been sold for first quarter delivery, but as a rule producers are not willing to sell much fuel that far ahead. The car supply is by no means satisfactory and a number of complaints are registered as to delayed shipments.

Old Material.—Reports from all dealers agree that no changes in prices have been made within the past week. Business is slowing down a little, especially in foundry scrap, as most of the local and nearby dealers seem to have provided for their requirements during the next three months. There is no scrap being bought by the foundries for delivery next year, but the steel mills have contracted for considerable material to be shipped the first part of 1920. Railroad offerings are very light. The following are dealers' buying prices f.o.b. at yards, in carload lots, southern Ohio and Cincinnati:

Per Gross Ton	
Bundled sheet	$13.00 to $13.50
Old iron rails	22.75 to 23.25
Relaying rails, 50 lb. and up	40.00 to 41.00
Rerolling steel rails	21.50 to 22.00
Heavy melting steel	17.50 to 18.00
Steel rails for melting	17.50 to 18.00
Old carwheels	19.00 to 20.00
No. 1 railroad wrought	19.00 to 19.50
Per Net Ton	
Cast borings	$8.50 to $9.00
Steel turnings	7.00 to 7.25
Railroad cast	22.00 to 22.50
No. 1 machinery	23.00 to 23.50
Burnt scrap	13.00 to 14.00
Iron axles	25.00 to 26.00
Locomotive tires (smooth inside)	18.00 to 18.50
Pipes and flues	14.00 to 16.00
Malleable cast	16.50 to 17.00
Railroad tank and sheet	13.00 to 13.50

Cleveland

CLEVELAND, Aug. 5.

Operations of the plants of the American Steel & Wire Co. in the Newburgh district, Cleveland, are now almost at a standstill as a result of the strike of the employees of the company's railroad, the Newburgh & South Shore. The Central furnaces are all banked and no effort is being made to bring in raw material. Operations are limited to working up some of the raw material in the yards. Curtailment in operations in the company's other Cleveland plants has been made necessary. Another local effect of labor troubles is the holding up of some of the ore boats at Lake Erie ports because of the dock strike at Ashland and Escanaba.

Iron Ore.—Ore shipments in July were 9,173,000 gross tons as indicated from returns from all docks but one at Escanaba, which is estimated. This is a gain of nearly 1,200,000 tons over June and brings the total shipments for the season to Aug. 1 close to 26,000,000 tons. There has been a little more activity in the ore market in the week, one seller taking orders aggregating about 150,000 tons and another selling a 40,000 ton lot. The demand for siliceous ore has been fairly good recently and one large producer reports that it sold all this grade of ore that it can mine this season. Labor troubles have developed that are interfering with shipments and are causing considerable anxiety among ore men. The dockmen at Ashland and Escanaba have gone on a strike and ore shipments to these ports were stopped this week. As a result ore from underground mines is being placed in stock piles. In addition, railroad shopmen have struck at Two Harbors, and if this strike continues any length of time, it is expected to cause a serious shortage of cars because no repair work is being done. In fact the strike is already having some effect on the supply of cars going to the mines. Ore prices delivered f.o.b. lower Lake ports are as follows:

Old range Bessemer, $6.45; old range non-Bessemer, $5.70; Mesaba Bessemer, $6.20; Mesaba non-Bessemer, $5.55.

Pig Iron.—A Valley interest has purchased 20,000 tons of basic iron for the last half, on which it is understood to have secured some price concession. Buyers claim that basic iron is being offered quite freely at 50c. under the regular price. Yet the matter of an advance is being given consideration by some producers. The market is moderately active and an increase in the demand for basic iron has developed. Considerable inquiry is now coming out for foundry iron for delivery during the first half of next year. However, most sellers are declining to take on tonnage for that delivery, and one or two producers who have made sales for next year when accompanied by last half contracts are now less inclined to do so at present prices. One sale of 2000 tons of malleable iron has been made by a Cleveland interest in the Pittsburgh district at $28.25 for the first half, or an advance of $1 a ton over present prices. In this case the buyer was anxious to place the iron and the higher quotation was promptly accepted. We note the sale of a 1000-ton lot of basic iron to a northern Ohio steel plant and 4000 tons of basic by a Cleveland interest in the Pittsburgh territory. One Cleveland producer reports sales in the week aggregating 12,000 tons and including 3000 tons of malleable iron in the Pittsburgh territory, nearly all for the last half delivery. Because of the possibility of higher prices one Cleveland seller is reserving the right to cancel all tonnage on new last half contracts that is not taken before the expiration of the year. Southern iron is also firmer. Some producers have withdrawn from the market and one Alabama interest has advanced its price 75c. a ton to $27.50 for iron running 1.75 to 2.25 per cent silicon and making an advance of 4 per cent above that price for every 50 point increase in silicon. This makes the advance 60c. or to $28.60 on 2.25 to 2.75 silicon iron, but does not change the present price on iron running 2.75 to 3.25 per cent silicon. M. A. Hanna & Co. blew out their furnace B in Detroit Aug. 1 for relining and will blow out their Cherry Valley furnace in about ten days. We quote delivery Cleveland as follows:

Bessemer	$29.35
Basic	26.15
Northern No. 2 foundry, silicon, 1.75 to 2.25	27.15
Southern foundry, silicon, 2.25 to 2.75	33.00
Gray forge	26.15
Ohio silvery, silicon, 8 per cent	42.65
Standard low phos., Valley furnace	$38.00 to 40.00

Finished Iron and Steel.—The market is very active in all lines except plates. A heavy volume of steel-bar specifications is coming out, largely from the automobile industry, that is crowding the mills for deliveries. The stocks of many consumers are low. Plates are still lagging, and price shading by smaller mills has not disappeared. On a round lot contract for last half, placed in the week, the buyers secured a 2.50c.

price. A large amount of new structural work is being placed and figured on. The Citizens and Union National Commercial Banks, Cleveland, will erect a building requiring several thousand tons of steel. Awards during the week included the following: Goodyear Tire & Rubber Co. plant at Los Angeles, Cal., 7000 tons of steel and 900 tons of reinforced bars to Burger Iron Co., Akron; White Co. plant addition, Cleveland, 675 tons to Massillon Bridge & Structural Co.; and Cleveland Heights High School 200 tons to T. H. Brooks & Co. Bids for the county jail, Cleveland, 1700 tons, will be readvertised. New inquiries include: Foote-Burte Co., Cleveland, machine tool plant, 900 tons; Maxwell Motor Car Co., Detroit, 900 tons, and steel for a new Columbus, Ohio, plant for Timken Roller Bearing Co. Bids will be taken shortly for steel for a large addition for the Cleveland Tractor Co. The Youngstown Steel Car Co. is inquiring for 700 tons of standard rails for its Niles, Ohio, plant. Re-rolling mills are well filled with orders for hard steel bars for building work, the demand for which continues heavy. The price is firm at 2.35c., Pittsburgh. The sheet market is still very active. Some Ohio mills are filled up for the third quarter, and in view of the labor situation and possible increase in costs are refusing to book orders for the fourth quarter. Some reservations are being taken subject to prices prevailing in that quarter. Warehouse prices are as follows:

Steel bars, 3.27c.; plates, 3.57c.; structural shapes, 3.37c.; bands and hoops, 3.97c.; No. 10 blue annealed sheets, 4.47c.; No. 28 black sheets, 5.27c.; No. 28 galvanized sheets, 6.62c.

Bolts, Nuts and Rivets.—Some of the Cleveland manufacturers advanced prices Aug. 1 10 per cent on bolts and semi-finished nuts, but made no price changes on hot pressed nuts. However, the advance is not general. The demand for bolts and nuts is heavy and some makers are from six to eight weeks behind on bolts of smaller sizes. Rivet manufacturers advanced prices Aug. 1 $4 a ton on boiler and structural rivets, which are now quoted at 4c. for boiler and 3.90c. for structural rivets.

Coke.—New demand for foundry coke is light, but consumers are taking heavy shipments on contracts. There is a surplus for prompt shipment, and this is being offered at $4 per net ton for furnace and $5.25 for foundry coke. Most producers are quoting the latter at $5.50.

Old Material.—Consumers are staying out of the market, but there is still a heavy volume of trading between dealers, largely in heavy melting steel, borings and turnings. Prices are very firm and advances were made on several grades during the week. Dealers are paying $21.75 to $22 for heavy melting steel and are having a hard time in picking up this material, as the cutput of most producers is sold. Several lots of sheet steel aggregating 3000 tons were sold by the U. S. salvage board in Cleveland to a Chicago broker at an average price of $23.40. Dealers are paying $15 to $16 for borings, for Cleveland and Valley delivery, $15.50 for mixed borings and turnings and $14.50 to $15 for short shovel turnings for blast furnaces. Re-rolling rails are in heavy demand, some yard dealers buying these for relaying purposes. Sales of cast scrap are reported at $25 and busheling at $25.50. We quote per gross ton delivered consumer's yard in Cleveland and vicinity as follows:

Heavy melting steel	$21.50 to $22.00
Steel rails, under 3 ft	23.50 to 24.00
Steel rails, rerolling	25.50 to 26.00
Iron rails	27.00 to 28.00
Iron car axles	35.00 to 36.00
Steel car axles	33.00 to 34.00
Low phosphorus melting scrap	22.75 to 23.25
Cast borings	15.50 to 16.00
Iron and steel turnings and drillings	13.00 to 13.50
Compressed steel	18.75 to 19.25
No. 1 railroad wrought	23.50 to 24.50
Cast iron carwheels	24.50 to 25.00
Agricultural malleable	18.50 to 19.50
Railroad malleable	22.00 to 22.50
Steel axle turnings	17.50 to 18.00
Light bundled sheet scrap	16.00 to 17.00
No. 1 cast	24.00 to 25.00
No. 1 busheling	20.50 to 21.50
Drop forge flashings, 10 in. and under	18.00 to 19.00
Drop forge flashings, over 10 in.	16.50 to 17.00
Railroad grate bars	19.50 to 20.00
Stove plate	19.00 to 20.00

San Francisco

SAN FRANCISCO, July 29.

Negotiations for the new wage scale and working agreement for all shipyard workers of the Pacific Coast have been temporarily suspended to permit the international officers attending wage conferences in this city to visit Los Angeles, Portland, Seattle, and Tacoma, in an effort to settle wage troubles in those cities, and to get the representatives of the shipyards in them to participate in the wage conference in San Francisco, so that when the agreement is reached it will affect the entire Pacific Coast. It is anticipated that out of the conferences an agreement will be reached that will be satisfactory to all parties concerned.

The general impression in the trade, both among the representatives of the Eastern mills and the local jobbers, is one of optimism. It is stated that the improved conditions in the East are bound to be reflected here within a comparatively short period, and already for many materials, especially wrought pipe, a decided betterment in demand is noted. While building is still far below the records in other sections it is felt this condition cannot prevail much longer.

Bars.—The demand for reinforcing bars seems to be on the increase, although some of the local mills do not find any decided improvement. The Pacific Coast Steel Co. has a good supply on hand and it has closed down its local furnaces until Sept. 1. Other mills are running. The stock on hand is being rapidly absorbed.

Structural Steel.—Structural shapes are in very little demand. No new buildings using fabricated steel are reported and most of the bridges at present planned will be built of concrete without the use of structural steel.

Sheets.—Sheets are showing more activity. Some of the mills have increased the price 25c. per 100 lb., and this has had the effect of increasing the demand, as the users fear that there will be an increase all along the line. The jobbers have not as yet advanced the price on their stocks.

Plates.—Plates are dead. Until the shipyards begin to build on their own account, it is not expected there will be much of a revival in this material.

Wrought Steel Pipe.—There is a heavy demand from the oil regions for wrought pipe and added to this the irrigation plants are buying actively. There is also a good demand for boiler tubes. This business has shown a steady increase in the past month and the wrought pipe men regard it as an excellent indication of future business. Deliveries are becoming slow, ranging from three to six months, and some of the mills have advanced prices. All of this has helped to stimulate the demand, among users who fear prices are going higher and that deliveries may become worse.

Cast-Iron Pipe.—The price of cast-iron pipe has been advanced $2. Deliveries are becoming slower, but as yet this has not stimulated demand. Taken in connection with the advancing market on wrought pipe and sheets, however, it is believed that consumers will soon be in the market in larger numbers. A contract was recently awarded to the American at Santa Barbara for 16 tons of 6-in. and 28 tons of 8-in. The city of Woodland will call for bids for a carload of 4-in. pipe, Aug. 4.

Pig Iron and Coke.—There is no change in pig iron or coke.

Old Material.—Scrap is becoming stronger. With the Pacific Coast Steel Co.'s furnaces closed down there is not so much local demand for scrap, and about the only material coming into the market is from the shipyards. Melting scrap sold at $17 per net ton this week. Cast iron is scarce and is nominally quoted at $36 to $38. On July 29 approximately 1500 tons of scrap were shipped on the steamer West Kasan to China by the California Iron Yards and Jno. L. Key. On Aug. 15 it is reported that at least 2000 tons more will be shipped to the same country. Japan, for the present, seems to be out of the market.

EXPORT TRADE

Further Reduction in Ocean Rates to United Kingdom and Argentina—July Business in Good Volume

Reduced ocean freight rates to the United Kingdom and Buenos Aires, Argentina, with prospects of lower rates also to Brazil, may further stimulate export trade. The conference lines have reduced the United Kingdom rates to $12 for pig iron and semi-finished steel and $13 for finished material. British lines have announced a reduction to Buenos Aires of $5 a ton, or from $25 to $20, except that the rate on barbed wire is $22.50. The United States Shipping Board has met these new rates. Shipments of food products and other bulky freight to Europe are so heavy that the shipping companies are in need of deadweight tonnage, hence the more attractive rates for iron and steel.

Much is heard among exporters of Japanese inquiries for ship steel, but apparently only a few of these have yet developed into orders. A Philadelphia company has closed about 9500 tons of plates and shapes for that country and has 10,000 tons more under negotiation, which will probably be closed this week. Other fair-sized tonnages are reported to have been closed elsewhere.

Italy has also come into the market for ship steel, wanting about 16,000 tons of plates and shapes for six 8000-ton ships which may be built in that country. There is some question as to whether this business will come to the United States in view of the unfavorable exchange rate. Holland has also made inquiries here for various steel products, but here also the exchange rate appears as an obstacle which may be difficult to surmount.

Pig iron inquiries total at least 50,000 tons for export, and while small tonnages are being closed every week for shipment to several countries, not much progress is being made toward closing business in steel-making iron for England. Despite their apparent need British buyers appear reluctant to come to this country for iron even at prices which are well within reach of their home quotations.

Prices for export on most lines show firmness. An advance of about 10 per cent on bolts has been announced, the new prices being about 10 per cent higher than domestic prices. A peculiar exception is made in the case of Great Britain, which does not obtain as favorable a price by about 5 per cent as other countries. There has been a very heavy export demand for bolts from all parts of the world. Sheets, tinplate and bars show a stiffening tendency, though no change in prices has occurred.

July business was fully equal to that of June with most steel export houses, and in some cases better, although about the middle of July business showed signs of falling below the June record. One large company received a sufficient volume of business in the last few days to offset the slump of earlier in the month.

"One Thousand Technical Books" is the subject of a 123 page book compiled by Herbert L. Gowing and published by the American Library Association War Service, Washington, to satisfy the demand of the home library for a list of the technical books that will meet the needs of the discharged soldier or sailor in fitting him for useful civilian occupations. The arrangement is by broad subjects with an index by smaller subjects. An attempt has been made to arrange the books under subject in order of difficulty where scope is similar; otherwise to progress from the general treatise to the limited and specialized. Full annotation and the starring of entries suitable for first purchase add to the value of the book as a buying list.

Finishing mills of the Carnegie Steel Co., Youngstown district, were idle July 26 for the annual outing of the Carnegie Employees' Relief Association. The principal event was a baseball game between department teams for a prize of $75 offered by District Superintendent James H. Grose.

British Iron and Steel Market

Few Steel Price Advances as Yet, But Labor Uncertainty Checks Business

(By Cable)

LONDON, ENGLAND, Aug. 4.

Yorkshire miners now refuse to accept the coal settlement and business is tapering off with buyers in addition reluctant to quote. Owing to the holidays in July the Clyde shipbuilders launched only 30,000 tons in the month but have 900,000 tons on their books.

Cleveland pig iron is unchanged but Northamptonshire and Staffordshire furnaces have raised prices 20s. per ton. There are no general advances in the steel market but prices are irregular. Some works are asking 10s. advance on structural shapes and plates. Bar iron is now £22 and upward per ton and tin plates are quotable at 34s. 9d. to 35s. per base box. For galvanized sheets £28 5s. has been paid.

Japan is buying tin plates and black sheets freely. Small sales of American beams have been made in the United Kingdom for immediate shipment.

Belgian exports for May amount to 600 tons of pig iron, 600 tons of sheets, and 1000 tons of bars. Negotiations are still proceeding toward the formation of a combination of plants there.

French reports are that the Krupps are liquidating, that the German demand for war material having ceased the Krupps output for the second quarter of this year was valued at only 300,000 marks, while the cost for the same period is put at 3,000,000 marks. Americans who are reported interesting themselves in the Krupp plant are now said to have withdrawn.

The Rheinische Stahlwerke started independent selling on Aug. 1. A Vienna dispatch states that the controlling interest in the Bohler steel works has been acquired by American capitalists and 100,000 shares of the Alpin Montangesellschaft has been sold to Italian financiers. The Rombacher Hütte is reported liquidating but allied and neutral shareholders were allowed to subscribe for an equivalent number of shares in the new company.

Thirty steamers are expected soon to load iron ore in Sweden for Germany.

We quote per gross ton, except where otherwise stated, f.o.b. makers' works, with American equivalents figured at $4.36 for £1, with the reservation that most makers have temporarily withdrawn prices:

	£ s. d.	£ s. d.	
Pig iron			
East coast hematite	10 0 0	to 10 5 0	$43.60 to $44.69
West coast hematite	9 12 6	.....	41.96 .....
Cleveland No. 3 foundry	8 0 0	to 8 5 0	34.88 to 35.97
Cleveland basic	8 5 0	to 8 10 0	35.97 to 37.06
Billets	13 17 6	to 15 0 0	60.49 to 65.40
Tin plate and sheet bars	13 7 6	.....	58.31 .....
Rails, 60 lb. and upward	16 0 0	.....	69.76 .....
			Cents per lb.
Steel bars	19 15 0	.....	3.84 .....
Large rounds, etc.	17 17 6	.....	3.48 .....
Structural material:			
Beams	17 0 0	to 17 10 0	3.31 to 3.40
Plates	17 15 0	to 18 5 0	3.45 to 3.55
Plates, boiler	21 0 0	to 21 10 0	4.09 to 4.19
Bar iron, stand. crown	22 0 0	to 22 10 0	4.28 to 4.38
Galvanized sheets	28 5 0	.....	5.49 .....
Tin plates, 14 x 20, coke 112 sheets, 108 lb., f.o.b. Wales.	1 14 9	to 1 15 0	$7.57 to $7.63

About 300 employees of the Wharton Steel Co., Wharton, N. J., have returned to work after reaching an agreement with the company. The men have been out for more than two months. The agreement declares for the open shop, collective bargaining, no discrimination against union men and preference for local labor. An 8-hr. day is established with time and a half for overtime.

Non-Ferrous Metals

The Week's Prices

Cents per Pound for Early Delivery

	Copper, New York		Tin,	Lead		Spelter	
July	Lake	Electro-lytic	New York	New York	St. Louis	New York	St. Louis
30	23.50	23.25	70.00	5.80	5.55	7.55	7.20
31	23.00	22.75	70.00	5.70	5.45	7.45	7.10
Aug.							
1	23.00	22.75	70.00	5.70	5.45	7.50	7.15
2	23.00	22.75	70.00	5.70	5.45	7.75	7.40
4	23.00	22.75	70.00	5.75	5.50	7.95	7.60
5	23.00	22.75	70.00	5.75	5.50	7.75	7.40

NEW YORK, Aug. 5.

Sentimentally at least the markets already are affected by the threatened railroad strike and the unsettled condition in Wall Street. All the metals are quiet. Copper is a little lower. Tin is unchanged, with the speculative element still uppermost. Outsiders handling lead are underselling the leading interest, indicating a dull demand. Spelter prices became firmer in the week, then became easier again. In antimony there is no activity.

New York

Copper.—Quiet is the outstanding feature of the market. The big rush of a few weeks ago having completely subsided, prices have sagged until electrolytic can be easily had for 22.75c. for prompt, and it is probable that 22.50c. might be done. Another feature is that futures have been commanding a premium, 23.50c. to 24c. being asked for September and October. The acute situation with regard to the railroads, with its adverse effect on the stock market, is reflected in the metals, having already nullified a somewhat firmer tendency that was manifested in the latter part of last week. Should strike trouble ensue it is expected that metal at consuming points is likely to advance, while near-by deliveries will be hurried up. On futures the producers are reluctant to sell. Most of the selling has been on the part of second hands. In the heavy buying of July, producers were well filled up, and now they appear disposed to let resellers take profits at lower levels. Lake continues scarce and prices nominal.

Copper Averages.—The average price of Lake copper in July, based on daily quotations in The Iron Age, was 22.07c. The average price of electrolytic was 21.84½c.

Tin.—This metal also has been quiet. Foreign exchange continues to play a vital part in the business done. Some sellers are bearish, apparently believing that the rate for pounds sterling will go lower. Therefore they are willing to sell 1c. to 2c. lower than conservative houses, and they are getting the business. Consumers are going slowly because they, in some cases, also believe the exchange rate will decline further and that they will be able to buy in the future at a more advantageous price. Tin for shipment from the East in the last three months is quoted around 53c. to 53.25c. For earlier delivery, including September, 54c. is about the price. Early shipment of Straits tin from England is quoted at about 55c., and Lamb & Flagg tin for prompt shipment at 54.50c. American high-grade metal is quoted at 66.50c., and American 99 per cent at 65.50c. Spot Straits is unchanged at 70c., New York. Some tin has arrived in the week, but it has not affected the market, as was expected, only a sentimental effect resulting, inasmuch as the metal went directly into consumption.

Lead.—The market has turned quiet. Producers are holding firmly to their quotations, the leading interest asking 6c., New York, but outsiders are making concessions to an extent that really makes two markets existent. Producers quote 5.87½c. to 6c., while the outside price is around 5.75c., New York. The lower outside price is an indication of the lack of demand; also that the larger buying has been satisfied, and that consumers are no longer interested even at a lower price.

Spelter.—Buying came to an abrupt stop at the end of last week, the railroad situation having considerable to do with the stoppage of business and an easier trend of prices. Yesterday, 7.50c., New York, was bid, with around 7.75c. asked. Speculative activity was much in evidence last Saturday, with prices showing a wide range. Most of the producers are said to have but little metal to offer this side of October, and this is indicated by the shutting down of some of the larger plants, notably the electrolytic refinery of the Anaconda Copper Co., which produces 4000 to 5000 tons per month, about one-sixth to one-seventh of the output.

Antimony.—Antimony is extremely quiet, with the quotation unchanged at 9.37½c., New York, duty paid.

Aluminum.—No. 1 virgin metal, 98 to 99 per cent pure, is unchanged at 32c. to 33c., New York, in carload lots for early delivery.

Old Metals.—The market is dull. Dealers' selling prices are nominally as follows:

	Cents per lb.
Copper, heavy and crucible	23.00
Copper, heavy and wire	22.00
Copper, light and bottoms	19.00
Brass, heavy	15.00
Brass, light	11.00
Heavy machine composition	20.50
No. 1 yellow rod brass turnings	12.75
No. 1 red brass or composition turnings	16.00
Lead, heavy	5.75
Lead, tea	4.25
Zinc	6.00

Chicago

AUG. 5.—Metal market speculators who had purchased with the idea of selling at the top price have been unloading their stocks, with the result that copper, lead and spelter have declined. There has been less buying than for some time, and old-metal prices have fallen in sympathy with those for new material. We quote copper at 23.50c. for carloads; tin, 70c. to 72.50c.; lead, 5.70c. to 5.75c.; spelter, 7.63c. to 7.75c.; antimony, 10c. to 11c. On old metals we quote copper wire, crucible shapes, 17c.; copper clips, 15c.; copper bottoms, 14.50c.; red brass, 17c.; yellow brass, 11c.; lead pipe, 4.25c.; zinc, 5c.; pewter, No. 1, 35c.; tinfoil, 37c.; and block tin, 45c.; all these being buying prices for less than carload lots.

St. Louis

AUG. 4.—Non-ferrous metals have been quiet the past week and a little easier, lead closing at 5.85c. to-day and spelter at 8.50c. In less than carloads prices are: Lead, 6.10c.; spelter, 8.25c. to 8.50c.; tin, 74c.; copper, 24c.; antimony, 10.50c. On miscellaneous scrap metals we quote dealers' buying prices as follows: Light brass, 7.50c.; heavy yellow brass, 10c.; heavy red brass, 15c.; heavy copper and copper wire, 15c.; light copper, 13c.; pewter, 35c.; tinfoil, 43c.; lead, 4c.; zinc, 4c.; tea lead, 3c.; aluminum, 18c. In the Joplin ore district prices were a little easier early in the week because of the quieter tendency in the metal market, and sales generally were made at prices about on a par with the preceding week. The situation changed very little toward the end of the week. Zinc blende slumped suddenly to $48 per ton, basis 80 per cent metal; calamine, $30 per ton, basis 40 per cent; lead, $65 per ton, basis 80 per cent.

Cincinnati

CINCINNATI, Aug. 5.—The market is a trifle weaker and business has slowed down considerably, especially in the red metals. Crucible and heavy copper as well as copper wire are all three quoted around 17.50 to 18c. Heavy red brass is unchanged at 17.50c. Block tin pipe is weaker and is quoted from 50c. to 52c. Lead has gained a little strength and ranges from 4.50c. to 4.75c.

Prices Finished Iron and Steel, f.o.b. Pittsburgh

The prices below, except on nuts, bolts and rivets, are based on those announced at Washington by the Industrial Board on March 20, 1919, effective the following day, which since that date have largely governed market transactions, though there have been variations, as indicated in market reports on other pages.

Freight rates from Pittsburgh on finished iron and steel products, including wrought iron and steel pipe, with revisions effective Nov. 1, 1918, in carloads, to points named, per 100 lb., are as follows: New York, 27c.; Philadelphia, 24.5c.; Boston, 30c.; Buffalo, 17c.; Cleveland, 17c.; Cincinnati, 23c.; Indianapolis, 25c.; Chicago, 27c.; St. Louis, 34c.; Kansas City, 59c.; St. Paul, 49½c.; Denver, 99c.; Omaha, 59c.; minimum carload, 36,000 lb. to four last named points; New Orleans, 38.5c.; Birmingham, 57.5c.; Pacific Coast, $1.25; minimum carload, 80,000 lb. To the Pacific Coast the rate on steel bars and structural steel is $1.315, minimum carload 40,000 lb.; and $1.25, minimum carload 50,000 lb. On wrought iron and steel pipe the rate from Pittsburgh to Kansas City is 50c. per 100 lb., minimum carload 46,000 lb.; to Omaha, 50c., minimum carload 46,000 lb.; to St. Paul and Minneapolis, 49.5c.; minimum carload 46,000 lb.; Denver, 99c.; minimum carload 46,000 lb. A 3 per cent transportation tax applies. On iron and steel items not noted above, rates vary somewhat and are given in detail in the regular railroad tariffs:

Structural Material

I beams, 3 to 15 in.; channels, 3 to 15 in. angles, 3 to 6 in. on one or both legs, ¼ in. thick and over, and Zees, structural sizes, 2.45c.

Wire Products

Wire nails, $3.25 base per keg; galvanized, 1 in. and longer, including large-head barbed roofing nails, taking an advance over this price of $1.50, and shorter than 1 in., $2.00. Bright basic wire, $3.15 per 100 lb.; annealed fence wire, Nos. 6 to 9, $3.00; galvanized wire, $3.70; galvanized barbed wire and fence staples, $4.10; painted barbed wire, $3.40; polished fence staples, $3.40; cement-coated nails, $2.85 base; these prices being subject to the usual advances for the smaller trade, all f.o.b. Pittsburgh, freight added to point of delivery, terms 60 days net, less 2 per cent off for cash in 10 days. Discounts on woven-wire fencing are 60½ per cent off list for carload lots, 59½ per cent for 1000-rod lots, and 58½ per cent off for small lots, f.o.b. Pittsburgh.

Bolts, Nuts and Rivets

Large structural and ship rivets.....$3.90 base
Large boiler rivets.....$4.00
¼ in., 5/16 in. and 7/16 in. diam.....60-10-5 per cent off list
Machine bolts, hp. nuts, ⅝ in. x 4 in.:
Smaller and shorter, rolled threads....60-10 per cent off list
Cut threads .....50-10-10 per cent off list
Larger and longer sizes.....50-5 per cent off list
Machine bolts, c.p.c. and t. nuts, ⅜ in. x 4 in.:
Smaller and shorter .....45-10-5 per cent off list
Larger and longer.....40-10 per cent off list
Carriage bolts, ⅜ in. x 6 in.:
Smaller and shorter, rolled threads.50-10-10 per cent off list
Cut threads .....50-10 per cent off list
Larger and longer sizes.....45-5 per cent off list
Lag bolts .....65 per cent off list
Plow bolts, Nos. 1, 2 and 3.....50-10-5 per cent off list
Hot pressed nuts, sq. blank.....3.10c. per lb. off list
Hot pressed nuts, hex. blank.....3.10c. per lb. off list
Hot pressed nuts, sq. tapped.....2.85c. per lb. off list
Hot pressed nuts, hex. tapped.....2.85c. per lb. off list
C.p.c. and t. sq. and hex. nuts, blank.....3.10c. per lb. off list
C.p.c. and t. sq. and hex. nuts, tapped.....2.85c. per lb. off list
Semi-finished hex. nuts:
⅝ in. and larger.....70-10 per cent off list
9/16 in. and smaller.....80 per cent off list
Stove bolts in packages.....75-10-10 per cent off list
Stove bolts in bulk.....2½ per cent extra
Tire bolts .....60-10-10 per cent off list
The above discounts are from July 21, 1919.
All prices carry standard extras, Pittsburgh basis.

Wire Rods

No. 5 common basic or Bessemer rods to domestic consumers, $52; chain rods, $60; screw, rivet and bolt rods and other rods of that character, $60. Prices on high carbon rods are irregular. They range from $65 to $75, depending on carbons.

Railroad Spikes and Track Bolts

Railroad spikes 9/16 in. x 4½ in. and heavier, and small spikes, per 100 lb., $3.35 in lots of 200 kegs of 200 lb. each or more; track bolts, $4.35 per 100 lb. in carload lots of 200 kegs or more, and $4.90 in small lots. Boat and barge spikes, $3.85 per 100 lb. in carload lots of 200 kegs or more, f.o.b. Pittsburgh.

Terne Plate

Prices of terne plate are as follows: 8-lb. coating, 200 lb., $13.80 per package; 8-lb. coating, I-C., $14.10; 12-lb. coating, I. C., $15.80; 15-lb. coating, I. C., $16.80; 20-lb. coating, I. C., $18.05; 25-lb. coating, I. C., $19.30; 30-lb. coating, I. C., $20.30; 35-lb. coating, I. C., $21.30; 40-lb. coating, I. C., $22.30 per package, all f.o.b. Pittsburgh, freight added to point of delivery.

Iron and Steel Bars

Steel bars at 2.35c. from mill. Prices on bar iron are 2.75c.

Wrought Pipe

The following discounts are to jobbers for carload lots on the Pittsburgh basing card.

Butt Weld

Steel: Inches	Black	Galv.	Iron: Inches	Black	Galv.
⅛, ¼ and ⅜	50½	24	⅛ and ¼	29½	2½
½	54½	40	⅜	30½	3½
¾ to 3	57½	44	½	34½	16½
			¾ to 1½	39	23½

Lap Weld

2	50½	38	1¼	24½	9½
2½ to 6	53½	41	1½	31½	17½
7 to 12	50½	37	2	32½	18½
13 and 14	41	..	2½ to 6	34½	21½
15	38½	..	7 to 12	31½	18½

Butt Weld, extra strong, plain ends

⅛, ¼ and ⅜	46½	29		28½	11½
½	51½	39		33½	20½
¾ to 1½	55½	43	¾ to 1½	39½	24½
2 to 3	56½	44			

Lap Weld, extra strong, plain ends

2	48½	37	1¼	25½	10½
2½ to 4	51½	40	1½	31½	17½
4½ to 6	50½	39	2	33½	20½
7 to 8	46½	33	2½ to 4	35½	23½
9 to 12	41½	28	4½ to 6	34½	22½
			7 to 8	26½	14½
			9 to 12	21½	9½

To the large jobbing trade an additional 5 per cent is allowed over the above discounts, which are subject to the usual variations in weight of 5 per cent.

On butt and lap weld sizes of black iron pipe, discounts for less than carload lots to jobbers have been seven (7) points lower (higher price) than carload lots, and on butt and lap weld galvanized iron pipe have been nine (9) points lower (higher price).

Boiler Tubes

The following are the prices for carload lots, f.o.b. Pittsburgh:

Lap Welded Steel		*Charcoal Iron*	
3½ to 4½ in.	40½	3½ to 4½ in.	—16
2½ to 3¼ in.	30½	3 to 3¼ in.	— 1½
2¼ in.	24	2½ to 2¾ in.	+ 1
1¾ to 2 in.	19½	2 to 2¼ in.	+10
		1¾ to 1⅞ in.	+20

Standard Commercial Seamless—Cold Drawn or Hot Rolled

Per Net Ton		Per Net Ton	
1 in.	$327	1¾ in.	$207
1¼ in.	267	2 to 2½ in.	177
1⅜ in.	257	2¾ to 3¾ in.	167
1½ in.	207	4 in.	187
		4½ to 5 in.	207

These prices do not apply to special specifications for locomotive tubes nor to special specifications for tubes for the Navy Department, which will be subject to special negotiation.

Sheets

Makers' price for mill shipments on sheets of United States standard gage in carload and larger lots are as follows:

Blue Annealed—Bessemer

	Cents per lb.
No. 8 and heavier	3.50
Nos. 9 and 10 (base)	3.55
Nos. 11 and 12	3.60
Nos. 13 and 14	3.65
Nos. 15 and 16	3.75

Box Annealed, Ore Pass Cold Rolled—Bessemer

Nos. 17 to 21	4.15
Nos. 22 to 24	4.20
Nos. 25 and 26	4.25
No. 27	4.30
No. 28 (base)	4.35
No. 29	4.45
No. 30	4.55

Galvanized, Black Sheet Gage—Bessemer

Nos. 10 and 11	4.70
Nos. 12 and 14	4.80
Nos. 15 and 16	4.95
Nos. 17 to 21	5.10
Nos. 22 to 24	5.25
Nos. 25 and 26	5.40
No. 27	5.55
No. 28 (base)	5.70
No. 29	5.95
No. 30	6.20

Tin-Mill Black Plate—Bessemer

Nos. 15 and 16	4.15
Nos. 17 to 21	4.20
Nos. 22 to 24	4.25
Nos. 25 to 27	4.30
No. 28 (base)	4.35
No. 29	4.40
No. 30	4.40
Nos. 30½ and 31	4.45

PERSONAL

Allan Johnston Goodhue, whose retirement as Western sales manager of the United States Cast Iron Pipe & Foundry Co. was announced in THE IRON AGE of July 31, has closed a career of 34 years in the cast-iron pipe business, during the last 20 of which he held the position he is now leaving. He was born at Akron, Ohio, on July 18, 1844, and at the age of 18 enlisted in the Union army, serving three years. At the close of the Civil War he entered the banking business at Akron and continued in that vocation for five years. From Akron he went to Rochester, N. Y., where for seven years he was engaged in the shoe manufacturing business. Subsequently he engaged in banking in North Dakota for four years, following which he entered the cast-iron pipe business, with which he has been identified ever since. For 14 years he was with the Lake Shore Foundry, Cleveland, as general sales manager, and when that company was merged with the United States Cast Iron Pipe & Foundry Co. he was made Western sales manager, with headquarters at Chicago. While Mr. Goodhue will no longer be active in the business of the company, he will continue to act in an advisory capacity as Western sales manager emeritus.

A. J. GOODHUE

W. C. Greer, formerly with the Verona Steel Castings Co., Verona, Pa., and the Pittsburgh Brass Mfg. Co., is now connected with the McKenna Brass & Mfg. Co.

James E. Strong, superintendent of mines for the Skoss-Sheffield Co., Birmingham, Ala., has resigned.

Max F. Marcuse has become advertising manager for Rownson, Drew & Clydesdale, Inc., and W. J. Crouch Co., Inc., New York. He was graduated from the College of the City of New York and has held the following positions: New York division manager Prest-O-Lite Co., Indianapolis; advertising manager Hauck Mfg. Co., Brooklyn; assistant sales manager International Oxygen Co., Waverly, N. J.; export manager Intercontinental Export Corporation, New York.

J. H. Schoenly has become vice-president and generel manager of the Bethlehem Construction Co., Bethlehem, Pa. He was at one time the southern and southwestern sales agent for the Phoenix Iron Co., with headquarters at Baltimore. He left this position to become receiver of the Roanoke Bridge Co., Roanoke, Va., and after completing his work there was appointed assistant sales manager of steel products for the Simonds Mfg. Co. He left the latter concern to become associated with Joseph F. A. Comstead in the capacity of domestic sales manager.

Arno W. Gaebelein, formerly captain in the ordnance department, is in charge of the newly established New York office of the New Britain Machine Co., 50 Church Street.

Sir Vithaldas Thackersey, director of the Tata Iron & Steel Co., India, is now in this country.

Eugene Oudin, of Japy Frères et Cie., manufacturers of bolts, rivets, bolt-making machinery, sheet mills, etc., who has been in the United States for about two months, sailed for France on Aug. 1 on the Rochambeau.

Eli Joseph, president Joseph Joseph & Brothers Co., New York, iron and steel, has been knighted by the King of Italy for patriotic services to the Italian government. He sailed for Italy June 15 on business and will return to New York about Oct. 1. During the war he was special deputy fire commissioner of New York, having charge of the auxiliary force of the fire department.

C. Bateman Swasey has become treasurer of the Belcher Malleable Iron Co., Easton, Mass., having formerly been superintendent of the Allen's Avenue plant, Gorham Mfg. Co., Providence, R. I.

John McGrath, formerly with the Ingersoll-Rand Co. and the Bethlehem Steel Co., who has just returned from foreign service in the engineering corps of the American Expeditionary Forces, has joined the D. M. Osborne Machinery Co., Cleveland, in the capacity of salesman and expert production engineer. The sale and demonstration of Sidney heavy duty production lathes will receive his attention.

C. O'C. Sloane has resigned his connection with the Allied Machinery Co. of America, to accept a position with the Betts Machine Co., Rochester, N. Y.

F. B. Gerard has resigned as director of purchases of the Austin Co., engineer and builder, Cleveland, to become general manager of the Pilkington Brothers Co., Ltd., at Thorold, Ont., and left Aug. 1 for a short trip to the home office of the company at St. Helens, England. He was formerly Indianapolis representative of the Austin Co., and before his connection with that company was manager of the former German-American Portland Cement Co., La Salle, Ill. He has been succeeded as director of purchases of the Austin Co. by F. W. Mettler, formerly chief engineer of the Hunkin-Conkey Construction Co. and later for the Crowell-Sherman Co., Cleveland, but for the past 10 years in business for himself in that city.

The Maher Engineering Co., Chicago, has been formed by E. E. Maher to handle the sales and installation of Erie Engine Works high-speed engines, the Sims Co. feed-water heaters, Dayton-Dowd Co. centrifugal pumps, Wagener Steam Pump Co. pumps and Pratt Engineering and Machine Co. fertilizer and sulphuric acid machinery.

Philip T. King, who, prior to enlistment in the American Expeditionary Forces for overseas service, was associated with J. N. Kinney, 30 Church Street, New York, in selling locomotive and traveling cranes, has returned to his former connection.

C. B. Lord has resigned as general superintendent of the Wagner Electric Mfg. Co., St. Louis, to become consulting mechanical engineer for the company.

Myer M. Shuster, has become production engineer with the Clip-Bar Mfg. Co., Philadelphia, manufacturer of the Shuster Speed Wrench, having been discharged from the Naval air service.

W. G. Vrooman, formerly with the Cleveland Tool & Supply Co., Cleveland, has become associated with the Cleveland-Duplex Machinery Co., dealer in new and used machinery, as office manager.

Herbert S. Eades has been appointed assistant mechanical engineer of the Pencoyd, Pa., plant of the American Bridge Co. He was formerly assistant mechanical engineer of the company at Ambridge, Pa.

Charles A. Swan, formerly with the Hess Steel Corporation and Colonial Steel Co., has been appointed general superintendent of the Crucible Steel Forge Co., Cleveland. This company is installing electric furnaces, and expects to start the making of electric steel about Sept. 1.

Vincent A. Lambiase will represent the Cellite Products Co., New York, in the Bronx, Brooklyn and Long Island districts, handling the company's Sil-O-Cel for heat insulation and Filter-Cel for filtration.

E. C. Pierce has been placed in charge of the new branch office of the Baldwin Locomotive Works and the Standard Steel Works Co., Philadelphia, in the Union Arcade, Pittsburgh. He was previously in the general sales offices in Philadelphia. He will be assisted by Charles E. Hale.

Thomas O. Morgan, until recently head of the service department of the New York office of the American Steam Conveyor Corporation, Chicago, has been pro-

moted to the position of sales engineer. He will handle Long Island and Connecticut territory. H. S. Valentine has been made sales engineer in charge of Philadelphia territory, office in the North American Building, Philadelphia. Mr. Valentine is an experienced mechanical engineer and was with the Link Belt Co., Philadelphia, for five and one-half years, with the Brown Hoisting Machine Co. and Yale & Towne Mfg. Co. for six years, and with the Badenhausen Co., boilers, for one year.

Charles E. Leedy, formerly assistant district manager United States Shipping Board, Youngstown, Ohio, division, has been appointed by the Federal Export Corporation, New York, manager of its branch office in Valparaiso, Chile. He left Aug. 1 for a trip throughout the United States for the corporation and will sail in September for South America.

A bust of James A. Farrell, president United States Steel Corporation, is to be placed in the McKinley Memorial Building at Niles, Ohio.

Charles F. Gilman has been chosen general manager of Joseph Beal & Co., machine tool dealers, Boston, in place of A. P. Hanscom, resigned. Mr. Gilman was with the Factory & Mill Supply Co., Boston, for eight years.

George A. Paul, until recently a lieutenant in the American Expeditionary Forces, but formerly with the Eastern Steel Co., Pottsville, Pa., and C. L. Jahn, formerly with the Youngstown Sheet & Tube Co., as a salesman in the Philadelphia district, have joined the staff of the Pennsylvania Steel Export Co., Widener Building, Philadelphia.

Warren W. Baker, Francis S. Carr, L. Norris Hall and Stephen J. Carroll, officers of the Pennsylvania Steel Export Co., Philadelphia, have organized W. W. Baker & Co. and under that name will engage in a steel jobbing business. A three-story concrete building at 940 Front Street, Philadelphia, has been acquired, and the business of W. W. Baker & Co., and also that of the Pennsylvania Steel Export Co., will soon be housed in that building, which has 16,000 sq. ft. of warehouse space. At first Baker & Co. will put in stock only hot-rolled bars and wire products, but later will handle a full warehouse stock of miscellaneous steel products.

A. M. Conneen, New York sales manager of the structural and plate departments of the Bethlehem Steel Co., has been made vice-president and manager of the Hedden Iron Construction Co., steel fabricators, New York, succeeding A. E. Roberts, who has resigned.

Notable Mesta Machine Catalog

An unusually elaborate catalog, comprising 127 pages, 8½ x 11 in. in size, of heavy glazed paper, generously illustrated with informing halftone engravings, has been issued by the Mesta Machine Co., Pittsburgh. The views cover the plant itself, which give an idea of the capabilities of the plant, and also many of the blowing engines, blooming mill and other steel works installations, which bear witness definitely of the scope of the output.

The main foundry of the Mesta company is no less than 1200 ft. long and is 80 ft. wide, with aisles on both sides of 60 ft., extending the full length. This foundry has facilities for making castings up to 125 tons in weight. It contains seven air furnaces. The roll department contains seven air furnaces of 15 to 40 tons capacity. For making steel and special rolls there are four acid open-hearth furnaces of 40 tons and 50 tons capacity. The company also operates a steel foundry. A number of the views show the gear molding department, equipped particularly for making large size spur gears, double helical gears and bevel gears.

The forge plant includes a ship shafting department added when the Government was in urgent need.

The machine department includes facilities for machining gears of 30-ft. diameter and 6-ft. face.

The latter part of the book is devoted to rolling and steel mill equipment, the views comprising wheel mills, tire mills, jobbing and sheet mills, tin plate mills and cold mills, in addition to equipment for mills rolling heavier tonnage products.

OBITUARY

B. FRANK BARNES, president Barnes Drill Co., Rockford, Ill., and an inventor, died on a train at Eau Claire, Wis., of heart disease, while on a vacation. He was born in New York 62 years ago. For many years he was associated with his brothers, John and Fletcher, in the W. F. & John Barnes Co., organized in 1872 to make drills and lathes. From this concern he went into the organization of a similar industry which bore his own name. Retiring from that company, he organized the Barnes Drill Co. in 1907 and has been president since. He developed a new idea in upright drill construction in the form of an all geared drill, which the company has since perfected.

LAWRENCE M. JOHNSTON, one of the organizers and former president of the New Era Gas Engine Co., Dayton, Ohio, died in that city, after a brief illness, July 24. At an early age he became associated with his father in the iron business under the firm name of J. A. Johnston & Son. He was also connected for some time in an official capacity with the Dayton Ice Machine Co.

HENRY B. B. YERGASON, Cincinnati, died in New York July 29, after a long illness. He was 43 years old and for a long time had been connected with Rogers, Brown & Co. as manager of their publicity department, and later was local sales manager of the Kerner Incinerator Co., and at the same time was also secretary of the Cincinnati Builders' Exchange.

HARRY M. SHEPLER, well known in the sheet and tin plate industries through his connection with the sales department of the American Sheet & Tin Plate Co. for the past 17 years, died at his home in Chicago on Sunday morning, Aug. 3.

FRANK DIAZ, resident manager in Mexico City, Mexico, for the Pennsylvania Steel Export Co., Philadelphia, was killed recently in an automobile accident.

Overrules Protest Against Demurrage Charge

WASHINGTON, Aug. 5.—Delays by the Great Northern Railway Co. in installing intra-plant track facilities at the Northport, Wash., smelter of the Northport Smelting & Refining Co., cannot prevent the collection of demurrage charges according to a decision which the Interstate Commerce Commission has just handed down. This is an important precedent, because the Commission decided that such construction work does not come under interstate commerce law.

"The particular stretches of track, delay in the construction of which, complainant contends, caused the accrual of the demurrage," says the decision, "were purely intra-plant tracks, and the act to regulate commerce lays no duty upon defendant to construct them. Whatever construction or reconstruction may have been voluntarily undertaken in this case by the defendant, it does not appear that the undertaking was for a service of common carriage subject to the act, or that the default alleged constituted a violation of the act. Complainant had a plant track to which deliveries could be made, and in the absence of interference by the defendant with its use, deliveries tendered which in all other respects were within the terms of the demurrage tariffs were properly subject to demurrage charges for detention on defendant's rails."

The Commission has also decided that the rate on billets and blooms which exceeded the "contemporaneous rate on pig iron" was unreasonable. Complaint was made by the Inland Steel Co., Indiana Harbor, Ind., based on a charge of 2.5c. per 100 lb., for transportation of 18 carloads of billets and blooms from Indiana Harbor to Chicago Heights, Ill. At the same time the rate on pig iron in carloads between these points was 42 cents per gross ton. After the shipments had been made, the pig iron rate was made applicable to billets. The Commission ordered reparation accordingly. O. F. S.

Pittsburgh and Nearby Vicinity

The Heller Bros. Co., constructing engineers, Youngstown, Ohio, has received the contract for the grading, foundation work, concrete, machine foundations, sewers and railway trestle for the plant of the Youngstown Pressed Steel Co. to be built at Warren, Ohio.

The S. R. Smythe Co., constructing engineers, House Building, Pittsburgh, has a contract from the Pittsburgh Steel Foundry for the remodeling and rebuilding of its open-hearth steel plant at Glassport, Pa. The present open-hearth plant, which contains four small furnaces, is being torn out, and the Smythe company will install three modern 30-ton basic open-hearth furnaces. For the Wheeling Mold & Foundry Co., Wheeling, W. Va., the Smythe company is building a 30-ton basic open-hearth furnace, a 25-ton air furnace and a mechanical gas-producer plant to supply gas for all furnaces. For the Nagle Steel Co., Pottstown, Pa., the company has a contract for the foundations, buildings, cranes, charging machines and all other equipment, and also two 30-ton open-hearth furnaces, together with gas producer and power plant, and for the Pittsburgh Rolls Corporation, Pittsburgh, the company is building a 12-ton open-hearth furnace, two core ovens and a double annealing furnace.

The Pittsburgh Steel Co. has filed an appeal in the common pleas court at Greensburg, Pa., from the $2,950,000 valuation placed upon its plant at Monessen, Pa. The statement declares that from 1916 to 1918, inclusive, the assessed valuation of the plant was $1,309,000 and that the local assessor fixed the valuation for 1919 at $1,950,000. When the Westmoreland county commissioners sat as the board of revision in Monessen in March the figures were increased $1,000,000. This, the statement says, is an increase of 127 per cent in three years, and is declared to be too high.

T. H. McGraw, Jr., merchant engineer and contractor, Park Building, Pittsburgh, has closed for the Erie City Iron Works, Erie, Pa., an order for seven 600-hp. vertical water tube boilers to utilize the waste heat gases from the seven 100-ton open-hearth furnaces now being built by the Weirton Steel Co., Weirton, W. Va. The boilers will be steel cased.

The Treadwell Construction Co., Midland, Pa., has received orders for 17 55,000-bbl. steel oil storage tanks for Tampico, Mexico, and is erecting some steel storage tanks in Cuba. Its fabricating shops are running to full capacity.

The Pittsburgh Model Engine Co. Works at Pittsburgh and Peru, Ind., is making some large additions to its Pittsburgh plant, consisting of a two-story brick machine shop, 60 x 320 ft., also a one-story brick building 40 x 80 ft., to be used for testing purposes, and a two-story brick building 40 x 160 ft., to be used for administration purposes. The company states that all the new tools needed for the machine shop have been purchased and no more equipment is needed. This concern is running its two plants to full capacity and has a considerable number of orders ahead.

The National Roll & Foundry Co. has received an order from the Eastern Rolling Mill Co., now building a tin-plate mill in the Canton district, near Baltimore, for 12 stands of 38 x 42-in. finishing mills, also 8 stands of 30 x 54-in. balanced roughing mills, 4 stands of pinions, together with the extra rolls. All these mills will be of extra heavy construction, the housings weighing 19 tons each. This new plant will be housed in a steel building 1000 ft. long. All equipment will be motor driven, and the plant will be equipped with water cooled floors. It is hoped to have the plant in operation early next year.

The Weirton Steel Co., which is building an open-hearth steel plant at Weirton, W. Va., placed a contract recently with the Westinghouse Electric & Mfg. Co. for two 4000-hp. motors for driving two bar mills, and for mill motors for the entire plant. A contract was also placed with the General Electric Co. for two 7500-kw. turbo generators, two motor-generator sets of 1500 kw. power each, switchboards and other electrical equipment for the power house and mill stations.

The plant of the Standard Sanitary Mfg. Co. on Preble Avenue, N. S., Pittsburgh, which has been practically closed since the armistice was signed, has been started up in the manufacture of sanitary ware.

The 48-in. universal plate mill at the Farrell, Pa., plant of the Carnegie Steel Co. has resumed operations, after being down for about a month for repairs. During the shutdown, new housings, tables and bed plates were installed and the capacity of the mill was considerably increased.

On Friday evening, July 25, the recently completed play-ground near the plant of the Blaw-Knox Co. at Hoboken, Pa., was formerly presented to the employees of that company. Invitations were issued and distributed throughout Hoboken and nearby towns. This playground is referred to as being complete in every detail, including pool, and is intended for employees and their children.

The Greenville Steel Car Co., Greenville, Pa., has taken a contract from the Pennsylvania Railroad for 1200 cars, which with other orders on its books, will give the concern full work for the rest of this year. The company recently added a steel building to one of its other buildings, 180 ft. long and 80 ft. wide, but states it is not in the market for any new equipment at this time.

The Riverside plant of the National Tube Co. at Benwood, W. Va., which has been idle for some months, is being made ready for operation and will start some time this month.

The Memphis Steel Construction Co., Pittsburgh, has received a contract from the Beacon Oil Co., Boston, for tanks, stills and agitators that will require about 2500 tons of plates, all of which will be furnished by mills in the Pittsburgh district.

The Jones & Laughlin Steel Co. has equipped its Talbot furnaces at the Aliquippa works, Woodlawn, Pa., with Orth regenerators.

Pittsburgh Crucible Steel Additions

Work is progressing rapidly on the large additions being made to the plant of the Pittsburgh Crucible Steel Co. at Midland, Pa., a subsidiary of the Crucible Steel Co. of America. The main additions include a 600-ton blast furnace and 100 Koppers by-product coke ovens equipped for the recovery of the by-products. A new electric coal hoist is being built to handle coal shipped from the mines of the company on the upper Monongahela River. The company is also installing a Wellman-Seaver car dumper and will equip its power house with a 10,000-kw. General Electric turbine generator. Another installation being made is an Otis electric elevator in connection with the new blast furnace stoves, so that the men can go to the top of either furnace without having to climb stairways. A Kling-Weidlein dry gas cleaner is being put in. The Riter-Conley Mfg. Co., Pittsburgh, is building the furnace and the three two-pass stoves. The company expects to have the blast furnace and the Koppers by-product coke plant completed early next year.

Large Steel Piping Contract Closed

The B. Floersheim Co., power piping construction, Farmers' Bank Building, Pittsburgh, has received a contract from the Weirton Steel Co. for the piping materials and pipe construction for the open hearth steel plant which the latter company is building at Weirton, W. Va. The contract includes high and low pressure steam, water, air, oil, gas and hydraulic systems for boiler house, power house, seven 100-ton open hearth furnaces, blooming and bar mills, also seven waste heat boiler installations. The Floersheim company had the contract for piping for the Weirton blast furnace blown in last month. For the Crucible Steel Co. of America it will install piping at the blast furnace and by-product coke plant being erected at Midland.

Steel Plant Activities at Youngstown

YOUNGSTOWN, Ohio, Aug. 5.—No. 1 blast furnace in the Haselton battery of the Republic Iron & Steel Co. resumed Aug. 5, after having been completely overhauled and repaired. All of the Republic company's Haselton furnaces are now in operation after undergoing a general overhauling. Three stacks operated by the company in this district are still idle, the Hannah furnace at the Mahoning Valley works, Youngstown; Hall furnace in Sharon Pa., and the Atlantic furnace in New Castle, Pa. All finishing departments are operating normally, except the 12-in. and 20-in. mills at the Brown-Bonnell and Bessemer works.

Grace furnace, a 500-ton stack operated by the Brier Hill Steel Co., suspended Aug. 2 and will be relined, leaving two stacks on the active list for Brier Hill. The corporation's sheet mills at Youngstown, Niles and Warren are operating at 90 per cent of capacity. Other district companies report schedules near 100 per cent.

Blast furnace operations in the Youngstown, Ohio, district will be further improved during August with blowing in of the merchant stack of the Struthers Furnace Co. at Struthers, and the Carnegie Steel Co. stack at Niles. The Struthers furnace, which was shut down June 6, is scheduled to resume Aug. 12. It has been overhauled and improved. The Niles stack is now undergoing repairs and has been ordered into blast as soon as these are completed.

There are only three idle stacks in the Mahoning Valley and six in the Shenango Valley.

Blast furnace operators in the Mahoning Valley estimate $1,000,000 has been expended during the past six months for improvements to district stacks. Before the war it cost about $60,000, it is stated, to reline a 500-ton furnace. A dozen furnaces were overhauled during the spring and summer. The amount expended on the largest is estimated to exceed $100,000.

Directors of the Ohio Structural Steel Co., which has acquired a site at Newton Falls, Trumbull county, have been elected as follows: J. N. Heltzel and W. E. Calderwood, Warren, Ohio; M. H. Stauffer, Niles; J. H. Laular, Elmira, N. Y., and R. B. Stauffer, Sayre, Pa. The company has a 7½ acre site, with a building 60 x 80 ft. Contract has been let for steel for another building to be 100 x 200 ft. J. N. Heltzel, president Heltzel Steel Form & Iron Co., Warren, is president.

Labor Day the new athletic arena created by the Brier Hill Steel Co. for its employees will be officially opened. J. F. King, assistant to W. F. Perry, directing industrial relations, will be in charge. The field has been named the Thomas athletic field, after President W. A. Thomas. It will have a grandstand with a seating capacity for 2000; an artificial lake capable of accommodating 500 bathers and a dance pavilion where 2000 may dance at one time. An athletic director will be in charge at all times.

Officials, superintendents, foremen and office employees of the Truscon Steel Co., Youngstown, Ohio, have formed the Kahnfest Club, which meets monthly, to discuss business and enjoy social diversions. It is named after President Julius Kahn.

James M. Woltz, safety director, and Roy Welch, assistant to the president, in charge of industrial relations, are in charge of arrangements for the annual Labor Day outing of employees of the Youngstown Sheet & Tube Co., Youngstown, Ohio. It will be held at Campbell Park, named after President James A. Campbell of the company. The works will close for the day.

Employees of the Youngstown Sheet & Tube Co., Youngstown, have a plan which it is believed will result in cutting down the high cost of living. The plan is being worked out by the representative organization of men devised nearly a year ago to adjust various mill problems. While plans are still incomplete, the men have selected a representative to confer with a leading mail order house with a view of collective buying at low rates. Announcement is made that the company will afford the men the use of a building for transacting business.

Report that the Republic Iron & Steel Co., Youngstown, had definitely decided to add 30 hot sheet mills to its DeForest works at Niles, Ohio, are incorrect. The company states that in any event, it will not add more than 20 mills to its plant, and it has not yet decided whether these will be sheet mills, tin mills, or both. It may be some little time before the company decides just what mills it will add to its DeForest plant.

All departments of the Republic Iron & Steel Co. except those requiring continuous operation will be closed at Youngstown, Aug. 23 for the annual outing of the Republic Iron & Steel Co. Relief Association.

IRON AND INDUSTRIAL STOCKS

Reactionary Tendency Develops Into Severe Decline—Steels and Coppers Make Partial Recovery

NEW YORK, Aug. 5.

The market lost its buoyancy the past week, the majority of stocks closing on Saturday with a net loss for the week. Call money was a factor, going to 20 per cent. The pessimistic news of the unsettled railroad outlook developing over Sunday was the cause assigned to the severe decline on Monday. Starting with the railroad shares, the reaction soon embraced the industrials, declines going from 1 to 6 points, with a further decline on Tuesday of 1 to 4 points, followed by a partial recovery running from 1 to 2 points in the afternoon. The range of prices on active iron and industrial stocks, from Tuesday of last week to Wednesday of this week was as follows:

Allis-Chalm. com.	39½- 47	Int. Har. pf.....	— -115
Allis-Chalm. pf..	85 - 95	La Belle Iron pf.	— -122½
Am. Can. com...	50½- 58⅝	Lackaw. Steel...	79⅜- 87
Am. Can pf.....	— -104⅜	Lake Sup. Corp..	21⅝- 24
Am. C. & Fd. cm.	110¼-117⅜	Midvale Steel ..	49½- 56⅞
Am. C. & Fd. pf.	115¼-115¾	Nat.-Acme	37 - 39¾
Am. Loco. com..	81 - 90⅜	Nat. En. & St. cm.	74 - 80½
Am. Loco. pf....	106½-107	N. Y. Air Brake.	110 -120⅝
Am. Radiator cm.	120 -121	Nova Scotia Steel	72 - 85⅛
Am. Ship com...	128 -132	Penn Seaboard ..	47¼- 51⅞
Am. Stl. Fdries.	38 - 45½	Pittsb. Steel pf..	95 - 96
Bald. Loco. com.	99½-117½	Pressed Stl. com.	81½- 90
Beth. Stl. com...	93½- 96⅞	Ry. Stl. Spg. com.	85 - 94
Beth. Stl. Cl. B..	84 -101	Ry. Stl. Spg. pf..	— -109
Case, J. I., pf...	98½- 99¼	Republic com.	86½- 97⅝
Cent. Fdry. com.	34 - 41⅜	Republic pf.	104⅝ 105
Cent. Fdry pf...	65 - 74¼	Sloss com.	60 - 69½
Chic. Pneu. Tool.	76½- 79	Superior Steel ..	41¼- 45⅛
Colo. Fuel	42½- 51	Transue-Williams	55 - 68⅞
Cru. Stl. com....	126½-140⅜	Un. Alloy Steel..	50⅜- 57
Cru. Stl. pf.....	100 -101	U. S. Pipe com..	32 - 36⅝
Gen. Electric....	159¼-169	U. S. Pipe pf....	67¾- 70¾
Gt. No. Ore. Cert.	43½- 49⅛	U. S. Steel com.	103 -113⅛
Gulf States Steel	58 - 67½	U. S. Steel pf...	114¼-117¼
H.-W. Refr. com.	119¾-120	Va. I. C. & Coke.	63 - 65
H.-W. Refr. pf..	— -102¼	Warwick	— - 8⅝
Int. Har. com...	131½-140	Westingh. Elec..	51 - 57⅜

Dividends

The American Radiator Co., quarterly, 4 per cent on the common, payable Sept. 30, and 1¾ per cent on the preferred, payable Aug. 15.

The Canada Foundries & Forgings Co., quarterly, 3 per cent on the common and 1¾ per cent on the preferred, payable Aug. 15.

Deere & Co., quarterly, 1¾ per cent on the preferred, payable Sept. 1.

The Harbison-Walker Refractories Co., quarterly, 1½ per cent on the common, payable Sept. 1.

The Inland Steel Co., quarterly, 2 per cent, payable Sept. 1.

The International Harvester Co., quarterly, 1¾ per cent on the preferred, payable Sept. 2.

The United States Steel Corporation, quarterly, 1¼ per cent on the common, payable Sept. 29, and 1¾ per cent on the preferred, payable Aug. 30.

"Electric Welding," vocational rehabilitation series No. 40, has been issued by the Federal Board for Vocational Education, Washington. It covers resistance welding, taking up the nature of the work, machinery, safety and hygiene, etc. Arc welding is covered in a similar manner, and numerous illustrations are given for the guidance of the disabled soldier.

Machinery Markets and News of the Works

PRICES ADVANCING

Increases Range from 5 to 20 Per Cent

Business Improving—Cleveland Automobile Maker Wants 250 to 300 Machines

Coincident with advances in prices by some builders of machine tools there has been an improved demand in nearly all markets, including some very large buying or prospective buying. A New England builder of automatic machines has received a $500,000 order from a Detroit automobile company, and a Cleveland automobile concern, the White Co., is in the market for 250 to 300 machines, to cost about $400,000.

Higher prices include general advances of from 10 to 16 2-3 per cent on engine lathes; about 20 per cent increase on plate-working machines by one manufacturer; a 17 per cent advance by a builder of large turret lathes, and a 5 per cent increase by a leading maker of grinding machines. There are predictions of other advances taking in milling machines and boring mills, and perhaps some other tools.

In Chicago the price advances were directly responsible for the placing of considerable business that had been pending. One western manufacturer of engine lathes received orders aggregating $100,000 on the day before the new prices went into effect, and a smaller maker of lathes booked about $50,000 worth of orders just prior to the advance. The activity in lathes has been a surprise to the trade, which had expected them to be a drug on the market.

The Pollak Steel Co., which is erecting an addition to its drop forge plant at Chicago, has issued a list of about 20 machines of varied types it will buy.

Railroad buying in fair volume has been done in Philadelphia by the Cumberland Valley, which needed about 25 shop tools, a list of which was issued several months ago. Shipbuilders have also been buying, the Bethlehem Shipbuilding Corporation having acquired new plate fabricating equipment for its Sparrows Point, Md., yard, while the Winnissemett Shipbuilding Co., Chelsea, Mass., has also bought new fabricating machinery. Fraser, Brace & Co., New York, have bought $60,000 to $70,000 worth of equipment for a ship repair plant at Clifton, Staten Island. A large ship repair plant is to be built near Havana, Cuba, by the Cuban Government, the contract, involving an expenditure of about $5,000,000.

New York

NEW YORK, Aug. 5.

A gradually broadening demand for metal-working and metal-handling equipment is clearly to be noted in Eastern markets. In July some sellers achieved the best selling records of any month this year, and this has been done mostly without any large individual buying, most of the orders consisting of from one to a half dozen machines. The opinion is general among sellers that prices will certainly be no lower during the last five months of the year, and that in numerous instances they will be higher. The recent advance by some lathe manufacturers of 10 to 15 per cent has been followed by certain other increases, a manufacturer of plate-working machinery having added about 20 per cent to its selling prices, while a Western builder of turret lathes has put out new prices about 17 per cent higher. A maker of grinding machines whose prices have not been changed since the end of the war has now advanced five per cent. There are predictions of other advances, notably on boring mills and milling machines.

A New England machine-tool builder has closed a contract for about $500,000 worth of automatic machines with a Detroit automobile company, and its plant is working at full capacity. Many New England tool plants are in a comfortable position as to business and deliveries on some lines have been recently extended. New England's diversified industries have come into the market more freely for tools. Makers of tanning and textile machinery have been buying small lots. The Winnissemett Shipbuilding Co., Chelsea, Mass., has bought a list of plate-working machinery.

One of the principal buyers in the New York market the past week was Fraser, Brace & Co., 1328 Broadway, New York, whose purchases for a ship repair plant to be built at Clifton, Staten Island, totalled possibly $60,000 or $70,000. Machine tools, punches and shears, and a 20-ton traveling crane were bought. The Perth Amboy Dry Dock Co., Perth Amboy, N. J., is also buying machinery for an extension of its ship repair facilities. No action has yet been taken by James Stewart & Co., 30 Church Street, New York, toward purchases for the $7,000,000 ship repair plant to be built by them near Norfolk, Va., for the Norfolk and Hampton Roads Ship Repair & Dry Dock Corporation.

The Aeromarine Plane & Motor Co., Keyport, N. J., has bought about $40,000 worth of tools for an automobile service station. The Adriance Machine Works, Brooklyn, has bought a few tools for the manufacture of sheet-metal working machines. The Gould Construction Co., which is building a new structural shop at Maspeth, Long Island, has bought steel-fabricating equipment.

The inquiry of the Standard Oil Co. of New Jersey for about 70 tools for shipment to Rumania, which was issued some months ago, has been revived with some modifications, and it is expected in the trade that purchases will soon be made. Export business continues in pretty fair volume. Some of the large houses report that their branches abroad, particularly in France and Belgium, have recently made large sales of tools from stock. Inquiries for large tools from China and Japan for railroad and shipyard work have appeared in the market.

Inquiries for cranes continue in fair volume, but some of the sales are being made at the expense of prices. The Navy Department has divided a list of standard bridge cranes for a structural shop at the Mare Island Navy Yard, San Francisco, between the Shaw Electric Crane Co. and the Cleveland Crane & Engineering Co. The Champion Engineering Co. has received an order at Pittsburgh for a 15-ton and a 20-ton crane, a 15-ton trolley and a 20-ton bridge from Westinghouse, Church, Kerr & Co. for the new plant of the Chicago Pneumatic Tool Co., Franklin, Pa. Westinghouse Church Kerr & Co. have issued an inquiry for four cranes for the plant of the Pettibone, Mulliken Co., Chicago. The Shaw Electric Crane Co. has sold a 35-ton crane to the Treadwell Engineering Co., Easton, Pa., and two special cranes for unloading canal barges to the State of New York. The Niles-Bement-Pond Co. has received an order for a 10-ton crane for the naval torpedo station at Newport, R. I.

J. N. Kinney, 30 Church Street, New York, has been appointed Eastern sales agent for the Bedford Foundry & Machine Co., Bedford, Ind., manufacturer of cranes.

The Electric Auto Lite Co., Toledo, Ohio, is moving to the former Fiat plant at Poughkeepsie, N. Y.

The Interborough Rapid Transit Co., 165 Broadway, New York, has completed plans for extensions and improvements to the one-story car repair shop, 122 x 131 ft., of the Manhattan Railway Co., at 1530-42 Lexington Avenue, to cost about $50,000.

The Standard Flexible Conduit Corporation, New York, has been incorporated with a capital stock of $20,000 by J. S. Kotler, E. J. and W. J. Ahearn, 296 East Broadway, to manufacture metallic conduits and tubing.

The Eisemann Magneto Co., 32 Thirty-third Street, Brooklyn, manufacturer of ignition products, has been incorporated

with an active capital of $1,650,000 by S. C. Worthen, C. F. Bailey and W. S. Sawyer.

The Combination Soda Fountain Co., New York, has been incorporated with a capital stock of $500,000 by C. B. Kelley, J. W. Remer and G. J. Frick, 60 Etna Street, Brooklyn, to manufacture soda fountains and equipment.

The Cook Spring Co., 420 East 106th Street, New York, has increased its capital stock from $50,000 to $100,000.

The Cotton Scutcher Lap Corporation, New York, has been incorporated with a capital stock of $50,000 by C. Zabriskie, E. Mehringer and J. H. Griffen, 277 Broadway, to manufacture cotton and textile machinery.

The Motorite Corporation, New York, has been incorporated with a capital of $100,000 by C. E. Taoru, S. A. H. Dayton and M. F. Mills, 211 West Eighty-second Street, to manufacture motors and machinery.

The Bronx River Iron Works, Bronx, New York, has been incorporated with a capital stock of $10,000 by J. F. Ernst, M. Gullubier and F. Welden, 2323 Prospect Avenue.

The Crane Co., Chicago, manufacturer of valves, steam specialties, etc., has awarded a contract to the White Construction Co., 95 Madison Avenue, New York, for a four-story works building, 90 x 200 ft., at 1996 Park Avenue, New York, to cost $175,000.

Collins Motors, Inc., Huntington, L. I., N. Y., has been incorporated with a capital stock of $400,000 by G. H. Stoll, D. C. Lawrence and H. Mensher, 646 Bushwick Avenue, Brooklyn, to manufacture automobile motors, parts, etc.

The Singer Motor Co., 102 West End Avenue, New York, has increased its capital stock from $50,000 to $100,000.

The American Radiator Co., 104 West Forty-second Street, New York, has filed plans for a new two-story reinforced-concrete works building, 114 x 184 ft., on Exterior Street, near 149th Street, to cost about $120,000.

The Standard Garage Equipment Co., Brooklyn, has been incorporated with a capital stock of $50,000 by P. R. Anderson, F. I. and S. J. Rametta, 165 Sterling Place, to manufacture garage equipment, automobile accessories, etc.

The American Tuning Pin Co., New York, has been incorporated with a capital of $100,000 by E. H. Franz, E. A. Ryan and A. J. Moelter, 1970 Bronxdale Avenue.

The G. E. S. Motor Car Service Co., Inc., 1472 Washington Avenue, New York, William Gullery, president, has filed plans for a one-story automobile repair works, 51 x 212 ft., on Park Avenue, near 166th Street, to cost $12,000.

The Adreff Construction Co., 467 Hendrix Street, Brooklyn, is having plans prepared for a three-story brick shop, 90 x 142 ft., for iron-working and other construction operations, at a cost of about $80,000.

The Long Island Motors Corporation, New York, has been incorporated with a capital stock of $1,000,000 by Dudley H. Case, George W. Case, Jr., New York, and Warren S. Orton, East Orange, N. J., to manufacture automobile motors, etc.

The Department of Health, New York, is considering the construction of a new power plant and boiler house at the Willard Parker Hospital to cost about $200,000.

The Paragon Incandescent Lamp Works, New York, has been incorporated with a capital stock of $60,000 by F. Alexander, N. Favian and L. T. Levy, 110 Morningside Drive, to manufacture electric lamps.

The Alpha Laboratories, New York, has been incorporated with a capital stock of $60,000 by W. A. Bell, J. H. Mandidge and W. T. Davis, Ogdensburg, N. Y., to manufacture incandescent electric lamps.

The John W. Sullivan Co., 827 East Ninth Street, New York, shipbuilder, has arranged for the construction of two new steel freighters at its yards at Elizabeth, N. J., for the East Coast Fisheries Co., New York.

The American Can Co., 120 Broadway, New York, has leased for a term of years the six-story, reinforced-concrete building, 80 x 460 ft., at Imlay and Bowne streets, Brooklyn, Atlantic Basin section, for a new local works building. The structure was erected a few years ago by the New York Dock Co., and was used by the Government during the war.

The Montour Aluminum Soldering Corporation, Montour Falls, N. Y., has been incorporated with a capital stock of $200,000 by G. F. Barton, F. A. Hatch and E. W. Livings.

The Universal Can Co., Binghamton, N. Y., has been incorporated with a capital stock of $1,000,000 by J. F. Montgomery, H. C. Hooks and B. E. Austin, 194 Rugby Road, Brooklyn, N. Y., to manufacture cans and other tin specialties.

The Metals Disintegrating Co., 62 Broadway, New York, is building a new plant at Townley, N. J.

The Bureau of Yards and Docks, Navy Department, Washington, is planning for a large dirigible hangar, with shop facilities, at Lakehurst, N. J. The structure will be of steel, 265 x 800 ft., and 174 ft. high, with arrangement for additions as may be required.

The Driver-Harris Co., Harrison, N. J., manufacturer of wire, cables, etc., is having plans prepared for a three-story reinforced-concrete addition, 50 x 100 ft., to cost $50,000.

Herman Turtletaub, 229 New Brunswick Avenue, Perth Amboy, N. J., is having plans prepared for a one-story automobile service building and forge shop, 50 x 120 ft., to cost $10,000.

The Ford Motor Co., Detroit, Mich., has awarded a contract to the Turner Construction Co., 242 Madison Avenue, New York, for two one-story additions on the Kearny meadows, Kearny, N. J., 255 x 860 ft.

The Atkinson & Long Mfg. Co., Newark, N. J., has been incorporated with a capital stock of $40,000 by Hugh and Rufus D. Atkinson and Allen T. Long to manufacture locks and other hardware specialties.

The Dumphey-Smith Co., Newark, N. J., has filed notice of organization to manufacture tinners' and roofers' products, with office at 98 New Street. Harvey F. Dumphey, 114 Eleventh Avenue, and Ralph W. Smith, 1233 Clinton Avenue, Irvington, head the company.

A one-story power plant, 42 x 50 ft., for works operation, will be constructed by the Seton Leather Co., 62 Verona Avenue, Newark, N. J., in connection with a new plant addition to cost about $65,000.

Louis Sacks, Wilson Avenue, near Avenue L, Newark, N. J., foundryman, has filed plans for a one-story boiler plant, 37 x 42 ft.

The Bachman Machine & Tool Mfg. Co., 130 Orchard Street, Newark, N. J., has filed notice of organization to manufacture tools and machinery. Carl Bachman, 38 Pennington Street, heads the company.

The Luthy Storage Battery Co., 420 Ogden Street, Newark, N. J., has increased its capital stock from $700,000 to $750,000.

The Simmons Co., 80 Madison Street, Newark, N. J., manufacturer of brass and metal beds, has acquired the plant of the Standard Aircraft Corporation, Brunswick Avenue, Elizabeth, for about $1,000,000. The plant consists of about 85 acres with about 20 brick and steel, and frame buildings, and will be used by the new owner for bed manufacture. Machinery and equipment will be installed at once, and it is expected to have the works ready for operation in September, giving employment to about 2000 persons. It is understood that with this acquisition the company has abandoned its immediate plans for the erection of a new plant at Newark, as recently announced, to be located on Wilson Avenue. Headquarters of the company are at Kenosha, Wis.

The Weber & Scher Mfg. Co., 24 Scott Street, Newark, N. J., has filed notice of organization to manufacture dies, gages, etc. George Scher, 134 North Fifteenth Street, heads the company.

The Sunshine Steam Iron System, Inc., New York, has been incorporated with a capital stock of $10,000 by T. G. Jasper, N. Rubenstein and M. Sunshine, 59 East Eighth Street, to manufacture ironing equipment, irons, etc.

The Borge Incinerator Corporation, Flatiron Building, New York, manufacturer of incinerating equipment, has increased its capital stock from $10,000 to $50,000.

The Julio F. Mendez Co., New York, has been incorporated with a capital stock of $50,000 by A. J. Albert, 1139 Park Avenue, Hoboken, N. J.; J. T. Dwane, 14 Woodbine Street, Brooklyn, and L. V. Lockwood, Riverside, Conn., to manufacture tools and machinery.

In the issue of July 10 it was stated that the Overland Rubber Co., now the Stanwood Rubber Co., 9 East Fortieth Street, New York, had increased its capital stock from $250,000 to $1,000,000, whereas it was the Overland Tire Co., Newark, that increased its capital. The Overland Rubber Co. changed its name to the Stanwood Rubber Co., May 29, 1919, at the same time, increasing the authorized capital stock to $3,000,000 of preferred and 500,000 shares of common stock without par value. This change of name was made in order to avoid any confusion that might arise between that company and any other company of similar name.

The Stanwood Rubber Co. owns its own plant on Freilinghuysen Avenue, Newark, purchased from the Militor Corporation, and is installing equipment. It will commence the production of Stanwood tires and tubes at an early date.

The Eastern Bridge Co., Worcester, Mass., has received contract from the Government for alterations and additions to the cannon shop at the Watervliet Arsenal, Watervliet, N. Y.

The Thatcher Propeller & Foundry Corporation, Albany, will construct a cupola and mill building at Thatcher and Learned streets, to cost $35,000.

Philadelphia

PHILADELPHIA, Aug. 5.

An improved demand for machine tools is noted in this market. Considerable encouragement has been derived from the purchase of about 25 machine tools by the Cumberland Valley Railroad, this being the first railroad buying of importance since the signing of the armistice. The orders were distributed among several dealers and totaled about $100,000 in value. The Bethlehem Steel Co. and affiliated interests have been buying additional equipment, among the orders placed being one for 10 plate-working machines for the shipyard at Sparrows Point, Md. The Crown Cork & Seal Co., Baltimore, has bought a number of machines.

The F. Gomery-Schwartz Motorcar Co., Philadelphia, is having plans prepared for a six-story reinforced concrete works and service building, 310 x 440 ft., at Twenty-fourth and Market streets.

In connection with improvements in the water system, the Bureau of Water, Philadelphia, will soon call for bids for 4 new motor-driven pumping units to be installed at the Queen Lane Station, with aggregate capacity of about 80,000,000 gal. per day. Director Datesman is in charge.

The Philadelphia & Reading Railroad, Philadelphia, will build a one-story power plant at its shops at Reading, about 50 x 50 ft.

Connery & Co., Second and Luzerne streets, Philadelphia, manufacturers of boilers, have filed plans for a one-story brick addition to their assembling shop, 75 x 90 ft.

The Dodge Steel Co., Tacony, Philadelphia, has awarded a contract to the Austin Co., Bulletin Building, for a new one-story steel foundry building.

The A. Schoenhut Co., Adams and Sepviva streets, Philadelphia, manufacturer of toys, etc., is taking bids for a new boiler plant in connection with a two-story works extension, 55 x 153 ft.

The Schimmel Electric Supply Co., 318 Market Street, Philadelphia, has acquired the building at 232-34 Market street, 38 x 168 ft., for a new establishment.

The Ronna Coal Co., Port Blanchard, Pa., will rebuild its coal washing plant, with extensions and installation of new equipment at a cost of about $100,000. W. P. Jennings, 705 Smith Street, Dunmore, Pa., is general manager.

To provide for proposed extensions at its different plants with installation of new equipment for increased output, the Susquehanna Collieries Co., Shamokin, Pa., has filed notice of increase in debt from $8,300,000 to $11,900,000.

The Royersford Foundry & Machine Co., Royersford, Pa., has had plans prepared for a one-story addition to its pattern shops, 30 x 80 ft.

William F. Lemon & Bro., Inc., Trenton, N. J., has been incorporated with a capital stock of $50,000 by William F. and Walter D. Lemon, and Edgar H. Freeman, to manufacture hardware.

The Phoenix Iron Works, Meadville, Pa., has awarded a contract to W. W. Lindsay & Co., Harrison Building, Philadelphia, for a one-story machine shop, to cost $75,000, including equipment.

The Chester Shipbuilding Co., Chester, Pa., is considering the erection of a new dry drydock on the Delaware River, with shop and ship construction facilities, to cost about $2,000,000. Preliminary tests are under way.

The New York Wire Cloth Co., 233 Broadway, New York, has had plans prepared for an addition to its plant at York, Pa., to cost about $50,000. J. A. Dempwolf, Cassatt Building, York, is the architect.

The Lycoming Foundry & Machine Co., Williamsport, Pa., has inaugurated construction on an addition to its machine shop and foundry to cost about $75,000. Improvement will also be made in the present plant.

The Universal Machinery Co., Reading, Pa., plans to increase its capital stock from $10,000 to $240,000. Charles A. Spaeth is secretary.

In order to provide additional working capital, the Lancaster Iron Works, Lancaster, Pa., will increase its capital stock from $300,000 to $500,000. A. C. Scully is secretary.

The United Engine & Mfg. Co., Hanover, Pa., will increase its capital stock from $20,000 to $150,000. O. S. Trone is secretary.

The Pan-American Aircraft Co., Norristown, Pa., recently incorporated with a capital stock of $5,000, will undertake construction, exhibition, advertising and passenger and fast express transportation. The officers of the company have all had technical training and experience in the U. S. Air Service. Howard R. Watt, the promoter, and now its secretary and treasurer, was in charge of salvage at the Aviation Base Repair, Dallas, Tex. Henry L. Brownback, chief engineer, was with the Aircraft and Production Bureau, and in the latter part of the war was special inspector from Washington of European aircraft factories and production. Russel Brownback is president; Alfred Wainwright, vice-president, was formerly officer in charge of machine gun assembly, U. S. Air Service. The company at present is operating the Canadian Curtiss airplanes in exhibition and passenger-carrying work, and expects to begin construction work in the near future.

New England

BOSTON, Aug. 4.

The advance in prices of machine tools has started in real earnest, with indications that the war figures will be reached all along the line in the not distant future. First to advance were the lathes, some of which several months ago were dropped from 15 to 20 per cent. Some of the shapers have also gone up in like proportion, and the dealers say that planers, drilling machines, both upright and radial, and milling machines will follow soon.

Two factors enter in the decision to make new prices, one that business is a great deal better than anybody expected it would be so soon after the armistice; the other that cost of production has increased materially. The fact is machine tool builders state costs have gone up to a greater degree in the past six months than in any similar period during the war. Especially is this the case with labor. The kind of man that the machine tool industry requires is scarce, almost to the point of being a rarity, excepting as skilled mechanics move from one shop to another, each time securing a little better wage. The few who were included in the surplus labor resulting from the armistice were quickly absorbed. The mass of munition workers were unskilled, excepting as they were taught certain special tasks, and they have now been relegated, for the most part, to the ranks of common labor.

Dealers report an exceptional demand for grinding machines. Very few of the makers cut their prices, so there is no great likelihood of any change in their lists, for the present. The planer business is getting out of the somewhat chaotic situation which followed the close of hostilities.

The manufacturers of small tools are very busy, some of them not being able to catch up with their orders. During the war their capacities were taxed on Government work, and their regular customers had to go without, excepting as they required tools in connection with war orders, and their customers are now fitting themselves out with those things which would have been purchased earlier had they been available.

The dealers in tool steel and other metals which enter into the requirements of the machine shops report a sharp improvement. On the other hand, several of the dealers in mill supplies complain that business has not picked up as they anticipated.

The General Electric Co. and other manufacturers of electric equipment and specialties are busy, with every prospect of a continuance of prosperous times. New power plants are relatively few, but there are replacement contracts for this class of equipment. The big demand, however, is for the wide diversity of other electrical apparatus and small electrical goods. The effort of the telephone companies to bring their systems to date, after the long period in which they were not permitted to expand because of the war, is felt in many factories in the New England territory.

The Cowan Truck Co., Canal Street, Holyoke, Mass., manufacturer of factory trucks, etc., has awarded a contract to the Casper Range Construction Co., Holyoke, for the erection of a two-story addition to its works.

The M. K. M. Chain Co., 862 Broad Street, Providence, R. I., has filed notice of organization to manufacture chains, etc. Oscar C. Maehnert, 123 Beacon avenue, and Charles F. King, 156 Elm Street, head the company.

The Hartford Rubber Works, Hartford, Conn., a subsidiary of the United States Rubber Co., has arranged for the immediate erection of an addition to its plant, to consist of two six-story extensions on Bartholomew avenue, each about 100 x 300 ft.; Charles B. Whittlesey is president.

The Standard Iron Works, 1-3 Laurence Street, New Haven, Conn., has filed notice of organization to manufacture iron and steel specialties. Samuel D. Pardoll is president.

The Remington Arms Co., Bridgeport, Conn., is planning for the sale of the new portion of its local works, erected for increased production during the war. This section of the plant consists of thirteen units of five stories each, of brick and steel construction; all of the buildings are connected, forming a series of letters H; five of the buildings are equipped for heat treatment work in connection with drop

forging operations. The company will still retain the original plant.

A new one-story power plant, 74 x 95 ft., to cost about $40,000 will be erected by the Hygienic Ice Co., State street, New Haven, Conn., to be used in connection with its general plant.

The United Wire & Supply Co., Auburn, R. I., has awarded a contract to William H. Hamlyn & Son, Inc., 35 Greenwich street, Providence, for the erection of two two-story plant additions, 100 x 120 ft., and 40 x 250 ft., respectively.

The Kenney Mfg. Co., Greenwood street, Auburn, R. I., has awarded a contract to Joseph F. Cole, 81 Niagara street, for the erection of a one-story addition, 60 x 145 ft., on Wellington street, with extension, 20 x 60 ft.

The new plant of the Jewell Belting Co., Hartford, Conn., plans for which have been completed, will consist of a main five-story, brick manufacturing building, 60 x 370 ft., with two adjoining buildings, two-story, 60 x 107 ft., and one-story, 102 x 122 ft. The new works will be located on property recently acquired at Elmwood, Conn.

The Industrial Mfg. Co., Worcester, Mass., recently incorporated with a capital stock of $50,000, will commence operations in a shop building on Heard street, Jamesville, specializing in the production of a self-locking steel nut, to be produced in standard sizes. It is proposed to increase the initial capacity of the plant at an early date, manufacturing other metal commodities. Charles W. Higginbotham is president, and Edmund R. Cummins, treasurer. William H. Sawtelle will be works manager.

G. Haarman & Co., Holyoke, Mass., operating a structural steel and iron plant, have acquired property at Willimansett, Mass., as a site for the erection of a new branch plant. Gustav Haarman is president.

The Bridgeport Hardware Mfg. Co., Bridgeport, Conn., is planning for the erection of a two-story addition, 20 x 150 ft., to its works on Iranistan avenue, to cost about $25,000. W. F. Hobbs is president.

The Central Oil & Gas Stove Co., Gardner, Mass., has perfected plans for the erection of the proposed new addition to its plant, to consist of a one- and three-story extension, 50 x 120 ft., and 40 x 50 ft., respectively, to cost about $40,000.

A one-story addition to the boiler plant at the works of the French Worsted Co., Hamlet avenue, Woonsocket, R. I., will be erected for use as a new pumping plant. It will be 50 x 50 ft., with extension, 12 x 51 ft.

The Jewelers' Toolmaking Co., 220 Eddy street, Providence, R. I., has filed notice of organization to manufacture jewelers' tools. George J. Lederer, 40 Marion avenue, and Carl Geisler, 194 Vinton street, head the company.

The Cornwall & Paterson Mfg. Co., State street, Bridgeport, Conn., manufacturer of piano hardware, etc., has had plans prepared for the erection of a new one-story plant addition, 40 x 100 ft., on Bedford street, to cost about $20,000.

The Viscaloid Co., 511 Lancaster street, Leominister, Mass., is planning for the construction of a two-story machine shop, 40 x 60 ft., to cost about $15,000.

The Davis Storage Battery Mfg. Co., Chestnut street, Lynn, Mass., is considering the erection of an addition to its works to cost about $150,000, including equipment.

The Springfield Tool Co., Dwight street, Springfield, Mass., has awarded a contract to Fred T. Ley & Co., 495 Main street, Springfield, for the erection of a two-story addition, 90 x 200 ft., to cost about $50,000.

Charles S. Huth, 207 Barnum avenue, Bridgeport, Conn., has awarded contract to W. R. Philips, Bridgeport, for a one-story machine shop, 30 x 60 ft., to cost $13,000.

The Bureau of Yards and Docks, Navy Department, Washington, has rejected bids for the construction of an addition and alterations to the structural shop, at the Boston Navy Yard, estimated to cost about $345,000.

The Carr Fastener Co., 31 Ames street, Cambridge, Mass., has taken bids for a one-story boiler house, 30 x 50 ft., in which it will install two 150-hp. oil-burning boilers.

The Hart & Hutchinson Co., New Britain, Conn., has let contract to the American Bridge Co., Boston, for a one-story factory alteration, 75 x 500 ft., to cost about $20,000.

E. D. Codman, 27 Kilby street, Boston, has awarded contract to Walsh Brothers, 150 Hampshire street, Cambridge, for an addition as a machine shop.

The Carr Fastener Co., Boston, manufacturers of metal fasteners, have completed arrangements for the establishment of a Canadian branch at Hamilton, Ont. A 2½-acre site has been purchased and building operations are to be commenced at once. The Carr company is capitalized at $250,000, and the buildings to be erected will cost $100,000. The Canadian plant will give employment to upward of 200 hands almost immediately, and it is expected ultimately to 400 or 500. The company expects to be manufacturing in its Hamilton plant before Dec. 1.

Buffalo

BUFFALO, Aug. 4.

Following the increase of its capital stock from $100,000 to $500,000 the Arrow Grip Mfg. Co., Glens Falls, N. Y., manufacturers of patented automobile chain grip, contemplates the erection of a plant to cost $100,000, and equipment for it to cost $75,000.

The Canopus Iron Corporation, Garrison, N. Y., has been granted a charter with a capital stock of $1,000,000. R. I. Gutham, G. O. Angell and J. G. Pease are the incorporators.

The United Projector Co., Buffalo, has been incorporated with a capital stock of $50,000 by L. E. Davidson, S. D. Kegley and H. V. Crook, to manufacture projecting machines and equipment for motion picture operation.

The American Locomotive Co., Dunkirk, N. Y., has commenced the erection of a large shop addition at its local works for increased operations in the wood-working departments.

The Hoffman Products Corporation, Buffalo, has been incorporated with a capital stock of $500,000 by W. M. Hoffman, 25 Gallitin Avenue; M. A. Willett, 746 Seventh Street, and F. H. Kraft, 154 Oakwood Place, to manufacture furnaces, gas generators, etc.

The Wolff Machine Co., Buffalo, has been incorporated with a capital stock of $10,000 by W. and E. and L. Wolff, to manufacture machinery and parts.

The Universal Instrument & Metal Co., Union, N. Y., has been incorporated with a capital stock of $75,000 by E. Nehilich, J. Sloan and D. S. Mersereau, to manufacture instruments, etc.

Messervey's, Inc., Buffalo, has been incorporated with a capital stock of $50,000 by J. E. Webster, 1265 West Avenue; W. R. Gass, 248 Niagara Street, and F. H. Alt, 527 Tonawanda Street, to manufacture mechanical equipment and metal products.

Flesch & Schmitt, 123 Andrews Street, Rochester, N. Y., manufacturers of cornices, etc., have had plans prepared for a one-story shop addition, 90 x 100 ft., at Brown and Jones streets, to cost $15,000.

The Mt. Morris Illuminating Co., Mt. Morris, N. Y., will build a new electric power plant on the north side of the Genesee River. The plant will be arranged for steam and water power operation, according to seasons of the year.

The American Handley-Paige Co., Ogdensburg, N. Y., recently incorporated with a capital stock of $5,000,000, is planning for a local airplane works, to consist of machine and repair shops, construction building and airdrome. The new plant, with equipment, is estimated to cost about $100,000. W. H. Workman, 82 Ford Street, is interested in the company.

Baltimore

BALTIMORE, Aug. 4.

Building activities have increased. There are a great many plans to build large garages, many to be equipped with repair departments and machinery. One of the latest announcements is from the Washington, Baltimore & Annapolis Electric Railroad, Baltimore, which will build a freight station in which considerable space will be leased to manufacturing companies.

The Standard Garage & Mfg. Co., 111 North Charles street, Baltimore, has been incorporated by Elmer S. Lambdin, John P. Triede and William M. Winkelman with $50,000 capital stock to manufacture portable metal garages, etc.

The Baltimore Dry Docks & Shipbuilding Co., Baltimore, will build an addition, 22 x 150 ft.

The Baltimore Metal Products Co., 801 South Howard street, Baltimore, has leased the factory at Howard and Montgomery streets.

The Hunter Heating Co., 510 Equitable Building, Baltimore, has been incorporated with $500,000 capital stock to manufacture heating apparatus. The incorporators are Albert C. Putts, William Ewin Bonn and Robert S. Mooney.

The Sanitary Heating & Ventilating Co., Danville, Va.,

has been incorporated with $20,000 capital stock. W. F. Cox is president and T. C. Guerrant is secretary.

The Overland-Fayette Co., Mount Hope, W. Va., will build a two-story garage and repair shop, 55 x 145 ft. Prices are wanted on automobile repair equipment. F. H. Gill is manager.

Simon Miller, Baltimore, has acquired the two-story buildings on property 30 x 120 ft., at 116 Key Highway, for the establishment of an automobile assembling works.

The Bond Mfg. Corporation, Wilmington, Del., manufacturer of bottle seals, etc., has had plans prepared for a one-story brick addition, 60 x 300 ft.

Frank A. Furst, Baltimore, capitalist, and associates, are organizing a company in co-operation with the city for the establishment of a new terminal on the waterfront, to cost about $5,000,000. The proposed improvement will include 8 piers, 32 buildings, with handling and conveying machinery for all classes of work. The project is to be inaugurated with the construction of one pier, 200 x 1200 ft., to cost about $825,000; and two warehouses to cost $1,824,000. The pier machinery and equipment is estimated to cost $40,000, with electric cranes estimated at $86,000, power and heating plant, $175,000; railroad trackage, $75,000, and locomotives, $25,000. F. W. Kesselbaum, engineer, Baltimore Dry Docks & Shipbuilding Co., has developed the preliminary plans.

A new power plant and boiler house to cost about $35,000 will be erected by the Warren Mfg. Co., Warren, Md., in connection with extensions at its local textile works to cost about $250,000.

The Scott Gas Appliance Co., Washington, D. C., has increased its capital stock from $150,000 to $500,000.

The plant of the J. Morton Poole Co., Wilmington, Del., is being offered for sale by the Du Pont Chemical Co., Wilmington, the present owner. The works comprise machine shop, foundry, erecting shop, pattern shop and auxiliary structures.

The Preston A. Young Co., Dover, Del., has been incorporated with a capital stock of $75,000 by James L. Wolocott, Mark W. Cole and A. B. Kingbury, to manufacture iron and steel products.

The Bakersville Milling, Light & Power Co., Bakersville, N. C., is planning a new electric power station to cost about $10,000.

The Southern Shipyard Corporation, Newport News, Va., recently incorporated with a capital stock of $200,000, has perfected plans for its proposed local shipbuilding plant. The initial works will comprise six buildings, including machine shop, pattern shop, wood-working plant, metal-working shop and general construction building. A pier and marine railway will be constructed. The plant will be equipped for the building of both steel and wooden vessels. C. A. Bloxon is president and general manager.

John F. Henry, Wilmington, Del., has filed plans for the erection of an addition to his foundry at 320 Eighth Avenue.

The C. Billups Son & Co., Norfolk, Va., manufacturer of plows and agricultural equipment, have awarded a contract to E. A. Goehring, Norfolk, for a one-story plant addition, 50 x 240 ft., to cost $30,000.

Charles Cunningham, Bristol, Va., and associates, are organizing a company with capital stock of $50,000 to manufacture steel castings, hot-water heaters and other foundry products.

The United States Brick & Lime Co., Roanoke, Va., has commenced the construction of additions to increase the capacity about 200 tons per day.

The High Point Machine Works, High Point, N. C., will establish a machine shop and foundry. Quotations are wanted on 100- to 150-hp. used boilers, generating sets, planer, large lathe and drills. W. W. Smith is president, and Shelby E. Corbett sales engineer.

Quotations on electric traveling cranes of from 5- to 10-ton capacity with not less than 30-ft. span, on 100- to 125-hp. Corliss engines, and on 100- to 120-h.p. fuel oil engines, are wanted by the Georgia Granite Co., Candler Building, Atlanta, Ga. E. B. Green is president.

The Bohnert Sheet Metal & Roofing Co., Miami, Fla., has been incorporated with $25,000 capital stock. M. J. Bohnert is president and treasurer, and Howard R. Bohnert vice-president and secretary.

The Lanham Cotton Cultivator Co., 425 Empire Building, Atlanta, Ga., has purchased property 200 x 480 ft., with option on an additional 300 ft., for the erection of factory to manufacture its cotton chopper-cultivator. Plans for both the building and equipment are now being prepared.

Pittsburgh

PITTSBURGH, Aug. 4.

The Standard Steel Products Co., Pittsburgh, recently incorporated, has acquired about 15½ acres at Coraopolis, Pa., as a site for its proposed works.

The Pittsburgh Truck Mfg. Co., Pittsburgh, has been incorporated with a capital of $100,000 by James G. Murray and associates to manufacture motor trucks.

The Duquesne Light Co., Pittsburgh, will build a two-story electric station at Crafton, Pa., to cost about $45,000.

The Overland-Fayette Co., Mount Hope, W. Va., is planning for a new two-story service works and repair plant, 55 x 145 ft. F. H. Gill is manager.

The Public Service Commission, W. Va., has recommended the immediate purchase of four electric motors by the Weston Electric Light, Power & Water Co., Weston, for pump and other operation at its waterworks. New indicating apparatus is also suggested.

The Wilcox Machine Co., Wheeling, W. Va., is considering the erection of an addition to its plant.

The New Idea Miners' Tool & Machine Co., Johnstown, Pa., has been incorporated by William Yurecsko, Edward Kluntzok and John P. Dunky, to manufacture tools and machines. The capital stock will be $10,000.

The Dilver Mfg. Co., Pittsburgh, capitalized at $150,000, has been incorporated to manufacture kitchen utensils, household novelties, devices and appliances. Among the incorporators are Harry L. McCoy, Avalon; W. E. Matthews, 552 Neville street, Pittsburgh; George D. Colborn, New Kensington, Pa., and G. W. Greenwood, Dunbar.

The Auto & Specialty Accessories Co., Pittsburgh, capitalized at $25,000, has been incorporated by H. E. Smythe, 1655 Shady avenue; Samuel B. Smythe, 1655 Shady avenue, and Paul F. Herbert, 540 Fallson Square, to manufacture automobiles and their accessories.

Chicago

CHICAGO, Aug. 4.

Western manufacturers of engine lathes advanced their prices from 10 to 16 2/3 per cent, effective Aug. 1. The impending advance resulted in the placing of considerable business the last few days of July. One Western manufacturer received orders aggregating $100,000 on the day before the advance. A smaller lathe maker booked $50,000 worth of business shortly before the advance became effective. The activity in lathes is a source of surprise to the trade, which had expected this tool to be a drug on the market. Despite the tremendous output during the war period, lathe manufacturers are very busy. One Western producer recently shipped 30 machines to Belgium and has received orders for more. There is also a good foreign demand for milling machines. A manufacturer located in this vicinity has booked considerable business with France. This company is having difficulty in keeping pace with orders, although its plant is operating day and night. The demand for light punch presses continues very heavy, the automobile accessory manufacturers being particularly active in purchasing these machines. Sales of other types of tools are also encouraging and the demand for heavier machines is stronger than it has been for some time. Orders continue to come in from a wide variety of consumers. Packing house machinery manufacturers are taking more interest in the market.

July was an excellent month for the dealers. Many report that it was the best month this year, while some assert that in business closed it was on a par with war months.

The Bucyrus Co., South Milwaukee, Wis., has purchased 10 engine lathes, two milling machines, one shaper and one 72-in. planer. The Creamery Package Co., DeKalb, Ill., has closed for three engine lathes, one cylindrical grinder, one piston ring grinder and other equipment.

The Pollak Steel Co., which is erecting an addition to its drop forge plant here, has issued the following list for machine tools and forge equipment:

One universal cutter and tool grinder.
One 24-in. upright drill press with swinging table.
One 32-in. upright drill press with swinging table.
One 18 x 72-in. die sinking machine, with cherrying attachment and circular vise arranged for motor drive, 220 volts direct current.
One alligator shear for shearing 4-in. soft machinery steel.
One 14 x 14-in. trimming press for 2000-lb. drop hammer.
One 18 x 18-in. trimming press for 5000-lb. drop hammer.
One 18 x 18-in. trimming press for 6000-lb. drop hammer.
One 2000-lb. steam drop hammer.
One 5000-lb. steam drop hammer.
One 6000-lb. steam drop hammer.
One 22 x 30-in. (inside) furnace for 2000-lb. drop hammer.

One 50 x 50-in. (inside) furnace for 5000-lb. drop hammer.
One 48 x 60-in. (inside) furnace for 6000-lb. drop hammer.
One 20 x 60-in. (inside) furnace for 5-in. forging machine.
One rotary table sandblast, table to be about 7 ft., 3 in. in diameter, complete with dust arrester and dust exhauster.
Two 10-ton, 220 volt direct current, electric traveling cranes with 5-ton auxiliary.
One twenty-five ton, 220 volt direct current, electric traveling crane, with 10-ton auxiliary.
Two 10-ton, 220 volt, direct current, electric traveling cranes.

The Morris Fertilizer Co., Atlanta, Ga., which recently inquired for machine tools through the Chicago Pneumatic Tool Co., Chicago, has issed a revised list, which it has sent directly to the trade.

Approximately 100,000 railroad shop men in Chicago and within a 200-mile radius of this city, were called out on a strike Aug. 1.

The Creamery Package Mfg. Co., Chicago, has purchased a tract 267 x 690 ft., on West Division Street and North Kostner Avenue, where it plans to erect a plant.

Bids have been received on the first unit of a plant to be erected for the Apex Appliance Co., manufacturer of washing machines, at West Thirtieth Street and Sawyer Avenue, Chicago. This section will be 100 x 260 ft., two stories.

The Dallas Brass & Copper Co. will erect a five-story factory, 100 x 138 ft., at the southwest corner of Orleans Street and Institute Place, Chicago, to cost $200,000.

Contracts have been awarded for the construction of a three-story factory and salesroom, 63 x 124 ft., for the Triangle Motors, Inc., at 2229 South Michigan Avenue, Chicago, at a cost of $80,000.

The All-American Truck Co. has awarded contracts for the erection of a one-story plant, 62 x 830 ft., at 6501-6559 West Grand Avenue, Chicago. The estimated cost is $200,000.

Cribben & Sexton, founders, have let a contract for the construction of a one-story addition, 88 x 112 ft., at Chicago Avenue and Humboldt Boulevard, Chicago, to cost $10,000.

The American Wire Fabrics Co. have started excavation for its new works on Western Avenue and 136th Street, Chicago. The units which will be built include a loom room, 204 x 266 ft., paint tower, 60 x 60 ft., 100 ft. high, and an annealing room, two stories, 60 x 60 ft. The improvements will cost $1,000,000.

The Van Sicklen Speedometer Co. has been incorporated in Delaware with a capital stock of $2,500,000 by Chicago interests. Heretofore the Van Sicklen speedometer has been manufactured by an Illinois company of the same name in the plant of the Elgin National Watch Co., Elgin, Ill.

The A. M. Machine Works, 721 West Washington Boulevard, Chicago, has been organized and has established a plant for cylinder grinding and general machine shop work.

The Baker Iron & Metal Co., Sixteenth and Arnold streets, Chicago, has been incorporated with a capital stock of $1,750,000. The incorporators are C. B. O'Neil, M. J. Atkinson and Frank P. Page.

The Monarch Carburetor Lock Co. of Illinois, 7 West Adams Street, Chicago, has been incorporated with a capital stock of $100,000 by Carlton E. Fox, B. T. Bancroft and J. A. F. Chandor.

The National Lock Co., Rockford, Ill., has commenced the construction of a six-story addition, 80 x 264 ft., to cost $250,000.

The Liberty Car Wheel Co. has been incorporated with a capital stock of $500,000, and has acquired 27½ acres in Hammond, Ind., where it will erect a plant to manufacture cast-iron car wheels. Patrick H. Joyce, president Illinois Car & Equipment Co. and also largely interested in a number of other car equipment companies, is president of the new corporation.

George B. Limbert & Co., Railroad Avenue and 145th Street, East Chicago, Ind., will erect two machine shops, one a one-story structure, 90 x 176 ft., and the other two stories, 52 x 88 ft., at a cost of $80,000.

The wire mill of the J. A. Roebling's Sons Co. at Dollar Bay, near Houghton, Mich., was recently damaged by a fire resulting from an electrical storm. The estimated loss was $100,000.

The Wolverine Storage Battery Co., Grand Rapids, Mich., has been incorporated with $50,000 capital stock to manufacture electrical and automobile supplies. The incorporators include Carl P. Palmer, R. E. Clare, K. B. Lacey and others.

The Kent Foundry Co., Grand Rapids, Mich., has been incorporated with a capital stock of $5000 to engage in the general foundry business. The incorporators include Harm Engbers, William H. Duffy, and Lewis E. Davis.

The Butler Mfg. Co., manufacturer of tanks and other sheet metal products, Kansas City, Mo., has purchased three and one-half acres adjoining its plant to provide space for additional buildings.

The Moline Forging & Mfg. Co., Moline, Ill., will soon commence the construction of a machine shop, 66 x 100 ft., adjacent to its plant on Forty-second Street.

The Hawkeye Wire Fence Co., a recently incorporated company, will commence the operation of a plant at Britt, Iowa, about Sept. 1.

The Winnebago Tractor Co., Rockford, Ill., has been incorporated with a capital of $150,000 by George N. Whitford, Nahun C. Bement and Albert Wienke to manufacture motor tractors.

The Linograph Co., Davenport, Iowa, manufacturer of typesetting machinery, has had plans prepared for the construction of a four-story and basement addition, 69 x 150 ft., to cost $150,000, including equipment. J. H. Hass is treasurer.

The Pettibone-Mulliken Co., 140 South Dearborn Street, Chicago, manufacturer of railroad equipment and supplies, has awarded a contract to Westinghouse Church Kerr & Co., 111 West Washington Street, for the erection of a one-story steel foundry at 4710 West Division Street, to cost about $200,000, including equipment.

The Whitman & Barnes Co., Akron, Ohio, manufacturer of reamers, drills and other cutting tools, has completed plans for the construction of a one-story addition to its plant at Twelfth and Morgan streets, Chicago, to be used as a forge shop. The extension is estimated to cost about $200,000. Stone & Webster, 38 South Dearborn Street, Chicago, are the engineers.

The South Beloit Stove & Mfg. Co., South Beloit, Ill., has been incorporated with a capital stock of $30,000 by Charles H. and L. G. Burgess and R. B. Williams, to manufacture stove and other heating equipment.

Catalogs Wanted

The Wm. A. Field Co., successor to the Mason Ericksson Machinery Co., and the Steel Art Tool Co., 208 South La Salle Street, Chicago, would like to have catalogs for its files covering machinery, machinist supplies, steel and tools, and also price lists. R. P. Alexander is comptroller.

Cleveland

CLEVELAND, Aug. 4.

The White Co., Cleveland, is in the market for 250 to 300 machines, aggregating over $400,000, for equipping an extension to its motor truck and automobile plant. This is the largest general inquiry in this section since the wartime buying ceased. The recent order placed with an Ohio manufacturer by the General Motors Corporation exceeded it in amount, aggregating about $1,000,000, but the General Motors requirements were largely special drilling machines. The White list comprises a general line of production machinery, including drilling machines, vertical boring mills, automatics, tapping machines, hand screw machines, etc. The market continues quite active. Considerable business is still coming from the automobile field in small lot orders and deliveries are getting further behind on some makes, particularly milling and grinding machines, for which the demand is heavy. New inquiries for vertical boring mills are plentiful. There is a fair demand for screw machines in small lots, and makers of automatic machines report an increasing volume of business. Some new demand for this class of machinery has recently developed from Eastern manufacturers of textile machinery.

Following an advance made by some lathe makers, noted last week, several other lathe manufacturers have marked up prices, the advances ranging from 5 to 15 and 20 per cent.

Makers of industrial cars report a very active demand for their product, which is coming largely from steel plants.

The F. B. Stearns Co., automobile manufacturer, Cleveland, will enlarge its plant by the erection of a four-story brick building, 200 x 400 ft.

The Galvanized Products Co., 8410 Lake Avenue, Cleveland, has acquired a site on the Erie Railroad at East 123rd Street, on which it contemplates the erection of a new plant.

The Brown Fence & Wire Co., 6532 Juniata Avenue, N. E., Cleveland, will erect a three-story brick, steel and concrete factory.

The Herbrand Co., Fremont, Ohio, has purchased a 35-acre site and contemplates beginning the erection of the first unit of a new plant within the next 60 days. Plans call for two main buildings, 1000 ft. long and 60 ft. wide.

The Industrial Electric Steel Castings Co., Ironville, Ohio, a Toledo suburb, will equip a steel foundry. It has acquired

a site on the Wheeling & Lake Erie Railroad, and will enlarge the present building, making it 120 x 180 ft. It is stated that four electric furnaces will be installed. L. S. Dukes, Findlay, Ohio, is president; W. E. Wine, vice-president, and R. L. Tillman, secretary.

It is announced that the Perfection Piston Ring Co., Cleveland, will build a plant in Ravenna, Ohio, and has acquired a site adjoining the Erie Railroad. It is stated that the Cleveland plant will eventually be removed to Ravenna.

The Ashland Tire & Rubber Co., Ashland, Ohio, has been organized with a capital stock of $1,000,000 and contemplates erecting a plant for the manufacture of fabric and cord tires. J. Fickel, Cleveland, is president, and A. A. Fickel, secretary and treasurer.

The Canton Stamping & Enameling Co., Canton, Ohio, will erect a $30,000 factory, to replace an old structure, and providing 45,000 sq. ft. of floor space. It will be used for the furnace equipment.

The Hoover Suction Sweeper Co., North Canton, Ohio, will build an addition which will be occupied by its grinding and polishing department.

The Ohio Structural Steel Co., Newton Falls, Ohio, has been incorporated with a capital stock of $75,000 and will erect a plant for the fabrication of structural steel work. J. W. Heltzel, president Heltzel Steel Form & Iron Co., Warren; M. H. Stauffer, chief engineer Niles Forge & Mfg. Co., Niles, and others are interested.

The Spenser Metal Products Co., Medina, Ohio, will increase its capital stock to $1,000,000 and will shortly begin the manufacture of metal toys.

The Ohio Machine & Tool Co., Kenton, Ohio, has placed a contract with the Bellefontaine Bridge & Steel Co. for an addition, 40 x 80 ft.

The Supreme Motors Co., Warren, Ohio, has commenced the erection of a factory, 100 x 400 ft., for the manufacture of automobile motors.

The L-M Axle Co., 247 Colonial Arcade, Cleveland, has been incorporated with a capital stock of $1,500,000. It is announced that the company is working on plans for a structure to manufacture truck axles. H. E. Shimmins is president; R. L. Queisser, vice-president; James L. Vaughan, secretary, and L. A. Otto, treasurer.

The Sterling Foundry Co., Wellington, Ohio, recently incorporated with $150,000 capital stock, is an allied company of the Sterling Machine & Stamping Co. The company was organized to operate the foundry department of the last-named firm and will take over its real estate, buildings, goodwill, etc. A contract has been let to the Austin Co., Cleveland, for an additional foundry building. The officers are as follows: President, R. E. Clisby; vice-president, C. M. Ross, and secretary and treasurer, V. M. Clisby.

The Wagner Mfg. Co., Sidney, Ohio, has awarded the contract for the erection of a three-story 50 x 70 ft. machine shop and a two-story 50 x 80-ft. foundry, at a cost of $65,000.

Plans are being considered by the East Ohio Gas Co., Cleveland, Ohio, for the erection of a gas and by-product coke plant at Youngstown, Ohio, to involve a possible ultimate expenditure of $10,000,000. Shortage of natural gas is assigned as reason for the proposed investment.

The Lumen Bearing Co., incorporated in Ohio for $250,000, is preparing to build a brass casting plant on Poland Avenue, Youngstown, Ohio. It will manufacture bronze bearings. The company is owned and controlled by the Buffalo company of the same name. H. P. Parrock, formerly of Youngstown, is general manager and W. H. Barr is president.

Detroit

DETROIT, Aug. 4.

Machine tool and supply dealers again this week report a continued increasing demand for their product, owing to the fact that a number of new plants and additions have been completed or are nearing completion. A number of large orders are listed and many more are in sight.

Building construction in Detroit during July broke all previous monthly records, permits being obtained for 1889 new structures, at an estimated aggregate cost of $7,338,485. Figures for the month's total of additions and alterations, it is stated, will exceed $600,000. The nearest approach to these figures were those of June this year, when 1857 building permits were issued for structures to cost an estimated total of $6,125,640.

The Michigan Screw Co., Lansing, has awarded contracts for the construction of a three-story addition, to cost between $125,000 and $135,000. Work has been started and is to be completed Oct. 1.

The Detroit Pressed Steel Co. has purchased the plant of the Detroit Shell Co., Carleton and Michigan avenues, Detroit, and will use it for the manufacture of Disteel wheels. The plant was originally built by the Springfield Body Corporation. The shell company, comprising a number of leading Detroit motor car manufacturers, suspended when the armistice was signed.

The Moore Plow & Implement Co., Greenville, Mich., is building a new foundry, 50 x 80 ft.

The Harrow Spring Co.'s plant in Kalamazoo, Mich., is included in the newly formed steel combine known as the Steel & Tube Co. of America.

New machinery and other equipment is being added to its present facilities by the Hardie Mfg. Co., Hudson, Mich., maker of fruit spray pumps.

The Foundation Co., Port Huron, Mich., has a contract to construct and equip a power house on the Dead River for the city of Marquette, Mich. When completed the work will have cost about $72,000.

The Rathbone Mfg. Company, Grand Rapids, Mich., will sell its present plant on Clyde Park Avenue and has purchased three acres in the south end of the city, where it will erect a modern foundry.

J. L. St. John and C. R. Smith, Cadillac, Mich., have obtained the manufacturing and selling rights for a new seed-cleaning machine known as the Sep-O-Vac. A plant will be erected in Cadillac.

The Piston Ring Co., Muskegon, Mich., has awarded the contract for its addition to the National Construction Co., Detroit and Muskegon. The buildings will comprise a four-story structure, 55 x 133 ft.; a one-story L addition, 55 x 65 ft., and a third building, 60 x 65 ft. When these are finished the company will have 80,670 sq. ft. of floor space, compared with 48,200 sq. ft. at present.

The Tower Truck Co., Greenville, Mich., is building an addition to its plant, consisting of a two-story building, 60 x 100 ft.

An announcement issued by the Olds Motor Works, Lansing, Mich., states that the three mammoth factors for increased production of Oldsmobiles and Olds trucks will be completed by winter. They comprise a new sheet metal and enameling plant, an addition to the assembly division and a new axle plant. When completed these units will represent an outlay of $2,900,000, of which $1,300,000 will be cost of the buildings and $1,600,000 cost of machinery and other equipment.

The Belding Foundry Co., Belding, Mich., has declared a cash dividend of 10 per cent, a stock dividend of 100 per cent, and has increased its capital from $25,000 to $100,000. Plans have been prepared for an addition, 80 x 120 ft.

The Niles Mfg. Co., Niles, Mich., is the new name of the Niles Invisible Door Check Co. The concern makes spark plugs.

The E. H. Ward Co., Lansing, Mich., has filed articles of incorporation with a capitalization of $30,000, of which $20,000 is paid in. The company makes a specialty of furnaces and heating systems.

The plant of the Defoe Shipbuilding Co., Bay City, Mich., was destroyed by fire last week, the loss being estimated at from $35,000 to $50,000. Plans are being made to rebuild at once. The company is working on a Government contract for several large tugs.

The Wadsworth Mfg. Co., Jefferson Avenue and Connors Creek, Detroit, was visited last Friday night by a million dollar fire, which totally destroyed the main building and menaced the neighboring plants of the Hudson Motor Car Co., Maxwell-Chalmers, Continental Motors and the Anderson Forge & Machine Co. The Wadsworth company makes automobile bodies, chiefly for the Ford Motor Co. About 1200 persons were employed. Within 24 hours after the fire, plans were being developed for obtaining temporary quarters and continuing the company's work. It is understood the plant will be rebuilt immediately.

The Fisher Body Co., Piquette and Oakland avenues, Detroit, manufacturer of automobile bodies, has arranged for a note issue of $5,000,000 for proposed expansion. It is taking bids for the erection of a six-story and basement addition, 158 x 581 ft., to cost about $1,500,000, including equipment. F. J. Fisher is president.

The Monroe Binder Board Co., Monroe, Mich., has taken bids for the construction of a one-story and basement addition, 26 x 220 ft., to cost about $100,000, including equipment.

An electric power plant will be erected by the Eddy Paper Co., Three Rivers, Mich., in connection with the construction of a new one-story paper mill. The entire project is estimated to cost in excess of $1,000,000.

The Ford Motor Co., Detroit, will remodel its works on the River Rouge, designed for the manufacture of submarine chasers, for the production of motor tractors, and has abandoned plans for the continuance of small boat manufacture at this plant.

The Anderson Electric Car Co., Detroit, manufacturer of the Detroit Electric automobile, is having plans prepared for the construction of a five-story addition, 50 x 180 ft., at Russell and Aberle streets.

To properly care for the increased demand, the Freuhauf Trailer Co., Gratiot Avenue, Detroit, has purchased a new factory site of 5 acres at Harper Avenue and the Detroit Terminal Railway. A. C. Freuhauf, president, states that a plant will be erected on this land, and considerable new equipment will be installed. It is also planned to immediately increase the capital stock from $150,000 to $250,000. The officers of the company are A. C. Freuhauf, president; H. C. Freuhauf, vice-president and general manager; E. L. Vosler, secretary and sales manager. The company reported that since the armistice there has been a greatly increased demand from foreign countries.

Indianapolis

INDIANAPOLIS, Aug. 4.

The Banner Gas Range Co., South Bend., Ind., has increased its capital stock from $75,000 to $100,000.

The Acme Aluminum & Brass Works, Indianapolis, has been incorporated with $40,000 capital stock, to manufacture aluminum and brass products. The directors are Frank L. Bridges, Peter Lamberius and Ben H. Steeb.

C. G. Conn, Ltd., Elkhart, Ind., manufacturer of band instruments, has increased its capital stock from $1,000,000 to $1,500,000.

The Crown Chair Co. has been incorporated at Evansville, Ind., with $150,000 capital stock to manufacture chairs and other furniture. The directors are A. F. Karges, Daniel Wertz and W. A. Carson.

The South Bend Tin Mfg. Co., South Bend, Ind., has been incorporated with $50,000 capital stock. The directors are Martin Kaniewski, Ignac Cierpiat and Adolph Cruszczynski.

The United Engineering Co., Greensburg, Ind., recently organized, has received an order for 3000 automobiles of light construction to be shipped to the London & Midland Motor Co., of London, England. A special factory 50 x 250 ft. will be built to handle the contract.

Cincinnati

CINCINNATI, Aug. 4.

July was a very satisfactory one for machine-tool builders. During the first two weeks quite a number of foreign orders were received, some from South America. However, both orders and inquiries from foreign sources have been steadily declining the past two weeks. Domestic business is improving and while orders are mainly for single tools, they are well scattered, including several from the Pacific Coast. It is rumored that a further advance on castings is imminent. Small shop supplies, such as bolts, nuts, rivets, etc., have already advanced about 10 per cent, and with the present high cost of labor it is generally understood that machine-tool makers will soon be compelled to mark up prices. Some lathe builders have already taken this step or are contemplating doing so at early date. A reduction in working time has increased manufacturing costs to a considerable extent.

In July more than 1000 building permits were issued by the Cincinnati Building Commissioner, representing estimated improvements of $1,562,890. In July, 1918, 919 permits were issued with cost of improvements estimated at $396,648.

The plant of the Worthington Pump & Machinery Corporation, Elmwood Place, Cincinnati, is now working at full capacity. It has tentative plans under way for an addition, 50 x 350 ft., to be used for the manufacture and storage of small air compressors.

The Acme Machine Tool Co., Cincinnati, has commenced removing its machinery from its Buck Street plant to the Champion Tool Works building at Winton Place. Plans are under way for an extensive addition to the Winton Place plant. Both companies will be operated under joint management.

The Buckeye Pattern Works, 3664 Colerain Avenue, Cincinnati, has been organized by E. T. Baden and George Lanser and has established a pattern shop.

The G. A. Schacht Motor Car Co., Cincinnati, will build an addition to its plant, 90 x 90 ft., one story.

The Central Engineering Co., Dayton, Ohio, has taken out a permit for a factory estimated to cost $10,000.

The Shilling Foundry Co., Columbus, Ohio, contemplates enlarging its plant at an early date. Clarence Shilling is president.

To take care of rush orders before its new plant at Columbus, Ohio, has been finished, the Timken Roller Bearing Co. has rented a portion of the plant of the Columbus Structural Steel Co. and machinery is now being installed.

The W. B. Marvin Mfg. Co., Urbana, Ohio, has increased its capital stock from $50,000 to $250,000 and will install additional equipment for the manufacture of tools and dies.

The Breece Mfg. Co., Portsmouth, Ohio, has increased its capital stock from $300,000 to $500,000. Among improvements contemplated is a power plant.

The St. Marys Foundry Co., St. Marys, Ohio, is building an addition to its plant that will greatly increase its present capacity.

The Kauffman Metal Parts Co., Bellefontaine, Ohio, is erecting an addition to its plant.

The Teetor-Hartley Motor Corporation, Connersville, Ind., has had plans prepared for a new plant. Building particulars are not yet available.

The Ansted Engineering Corporation, Connersville, Ind., has commenced work on a plant, approximately 100 x 400 ft.

The Royal Midget Automatic Heater Co., Wilmington, Ohio, has been organized by K. H. Grantham and others to manufacture instantaneous water heaters.

The Kentucky Electric Lamp Co., Owensboro, Ky., is planning for the erection of a three-story addition, 60 x 100 ft., to increase the daily output from 3000 to about 8000 lamps.

The Kentucky & West Virginia Power Co., Hazard, Ky., recently incorporated with a capital stock of $6,000,000, has taken over the plant and system of the Kentucky River Power Co., Hazard; the Tug River Electric Co., Sprigg, W. Va., and the Logan County Light & Power Co., Logan, W. Va. Plans are under way for the establishment of a new hydroelectric power plant to increase the present capacity. Bailey P. Woten, H. T. Taylor and J. G. Green, all of Hazard, are interested in the new company. R. E. Breed, president American Gas & Electric Co., Philadelphia, will head the organization.

The Universal Swing Joint Co., Springfield, Tenn., has been incorporated in Delaware with a capital of $250,000 by John Bridges, Springfield; E. H. Trenary and R. J. Kelly, Nashville, to manufacture iron and steel specialties.

The Casey-Hedges Co., Chattanooga, Tenn., manufacturer of boilers, etc., has perfected plans for the erection of a new machine shop, 65 x 200 ft., to cost about $40,000, including equipment.

Benjamin F. Vogt, Louisville, Ky., and associates, have organized the Weighing Machine Co., to manufacture weighing machinery.

Milwaukee

MILWAUKEE, Aug. 4.

In the last week of July relatively more inquiries have developed into orders than at any time during the first seven months of the year, with a gradual broadening to embrace all lines. So far this year the bulk of business came from the automotive industries. No large lot business has been received, and with few exceptions orders call for single tools or a few machines, but the volume is regarded with as much or more satisfaction than if the same business were composed of large lots. The demand for milling machines is growing and continues to be the outstanding feature of the local situation.

The Kohler Co., Kohler, Wis., awarded contracts Aug. 1 for the erection of a second foundry unit, 130 x 275 ft., and a new engineering building, 160 x 300 ft. The Kohler Co. manufactures enameled bathtubs, lavatories and other heavy sanitary ware, and is investing from $250,000 to $300,000 in extensions and new equipment. Walter J. Kohler is president and general manager.

The Surf Mfg. Co., Milwaukee, which has been incorporated with a capital stock of $100,000 to manufacture electric washing machines, will equip a plant of 15,000 sq. ft. at 109-113 Clinton Street, and contemplates an output of 5000 machines in the first year. Officers have been elected as follows: President, Oscar F. Fischedick; vice-president, J. Hoffmann; secretary, A. W. Schmidt; treasurer and factory manager, A. W. Krahn.

The Great Lakes Malleable Co., Milwaukee, a new corporation with a capital stock of $100,000, will build a new annealing shop, 60 x 64 ft., in addition to rebuilding the former Maynard steel foundry at 710-716 Reed Street, into a malleable casting shop. The general contract for the work has been let to John L. Stanage, consulting engineer, 144 Oneida Street. The officers are: President, F. J. Vea, president Stoughton Wagon Co., Stoughton, Wis.; vice-president, Olaf Hoff, Upper Montclair, N. J.; secretary, Raymond F. Ethier, Milwaukee; treasurer, C. M. Osterheld, Stoughton;

directors, C. O. Egeland, Stoughton; W. T. Hersher, Milwaukee, and Matthew Hoff, Upper Montclair, N. J. Mr. Hersher will be general manager. It is planned to begin operations Sept. 15.

The Simmons Co., Kenosha, Wis., manufacturer of metal and seamless steel beds, bed-springs, etc., has acquired the Hirsch & Spitz Co., Atlanta, Ga. The plant, which has heretofore manufactured only bed-springs, mattresses, etc., will be enlarged and equipment installed for the production of metal beds.

The Milwaukee Mfg. Co., Milwaukee, which has been incorporated with a capital stock of $200 000, intends to establish a plant for the manufacture of instantaneous water heaters. Further details are withheld pending definte developments. The promoters are Edwin W. Strauss, Louis J. Schneider and Max J. Leutermann, attorney, Metropolitan Block.

The Kissel Motor Car Co., Hartford, Wis., is converting a storage building into an annex to the automobile and truck body plant and will add from 150 to 200 operatives. Orders are being placed for some additional sheet metal and woodworking tools.

The Vim Tractor Co., Schleisingerville, Wis., has engaged Backes & Pfaller, architects, 216 West Water Street, Milwaukee, to design a one-story brick and steel-trussed factory addition, 80 x 200 ft., to be equipped for the assembling of tractors, gas engines, seeders and cultivators. The estimated cost is $50,000, including new machinery.

The Northern Paper Mills Co., Green Bay, Wis., has plans for a three-story paper machine building, 60 x 250 ft.; a three-story beater room, 80 x 108 ft., and a three-story auxiliary building, 80 x 138 ft., all of brick, steel and reinforced concrete. With additional machinery and equipment the improvement will cost about $180,000. Perry S. Wagner is general manager.

Charles A. Enslow, George H. Hawks and William T. Axon, of Janesville, Wis., are forming a $25,000 corporation to manufacture iron traffic posts, tobacco splitting machines and other steel and metal specialties.

The Key-Calk Horseshoe Co., Green Bay, Wis., has filed articles of dissolution.

The Excel Mfg. Co., 3402 South Pierce Street, Milwaukee, has increased its capital stock from $30,000 to $60,000.

The Safety Truck Brake Co., Waukesha, Wis., has been purchased from W. S. and F. G. Halladay by A. M. Steinborg and W. K. Miller, of Appleton, Wis., who will move the headquarters to that city and open a plant. Until now the manufacturing has been done under contract with the I. B. Rowell Co., Waukesha. The company makes a braking system for two-wheeled trucks and a roller-bearing four-wheel truck for shops and warehouses.

The Moline Plow Co., Stoughton, Wis., has broken ground for a three-story addition, 64 x 90 ft., which will be equipped mainly for woodworking and blacksmithing. The Stoughton branch factory makes farm and other heavy duty wagons and trucks, and is reported to be engaging in the manufacture of motor truck bodies and other specialties.

The Galloway-West Co., Fond du Lac, Wis., will build a two-story brick and concrete building, 80 x 205 ft., embracing a boiler and engine house in addition to a dairy products plant.

The Board of Education, Cudahy, Wis., has engaged Rosman & Wierdsma, architects, 424 Jefferson Street, Milwaukee, to design a new high school and manual training institute, the cost not to exceed $150,000.

A. W. Hoffman, architect, North Avenue and Third Street, Milwaukee, is preparing plans for a four-story factory, 88 x 374 ft.; warehouse, 88 x 154 ft., and storage building, 88 x 98 ft., all of brick and reinforced concrete. The name of the owner is withheld for the present. Bids will be taken after Aug. 10.

The Rhinelander Iron Co., Rhinelander, Wis., is preparing to build a new cupola building to replace the unit which was badly damaged by fire. The company has large unfilled orders on its books and intends to make the replacement immediately. John Dedier is president and manager.

The Hamilton-Beach Mfg. Co., Racine, Wis., which is building a two-story nickel-plating shop and warehouse 60 x 125 ft., will begin work upon its completion on a three-story factory addition, 52 x 400 ft., estimated to cost $200,000 with new equipment. A large assortment of new tools, including automatic machines, stamping, drilling, polishing and milling machines, will be required. Fred J. Osius is president and general manager.

The erection of structural steel for a four-story factory addition at Two Rivers, Wis., for the Aluminum Goods Mfg. Co., Manitowoc, Wis., was seriously delayed by a gale on July 28, which wrecked a considerable part of the structure and caused an estimated loss of $25,000.

St. Louis

ST. LOUIS, Aug.

The Eudora Compress & Storage Co., Eudora, Ark., has been incorporated with a capital stock of $100,000 by M. Schwartz, W. H. Stephenson and others, and is in the market for compress machinery.

The Advance Electric Co., St. Louis, will equip an addition to its plant for the manufacture of electrical machinery.

The Rex Machinery & Supply Co., Tulsa, Okla., has been incorporated with a capital stock of $100,000 by C. W. Lord, David Wallace and G. N. McGarvey.

The Texas-Mexico Pipe Line & Refining Co., Tulsa, Okla., has been organized by Robert Galbreath and others to build a pipe line from the Oklahoma fields to Aransas Pass, Tex., and to erect a refinery at Aransas Pass. A line to the Texas oil fields will also be equipped.

The Magna Oil & Refining Co., Tulsa, Okla., has been incorporated with a capital stock of $10,000,000 by H. Appleman, A. J. Lewis and J. Olsan of Tulsa.

The Co-operative Laundry Co., Little Rock, Ark., C. C. Tipton president, is in the market for about $50,000 worth of steam laundry machinery.

The Wagner Electric Mfg. Co., St. Louis, will erect a five-story factory, 140 x 160 ft.

The McQuay-Norris Mfg. Co., St. Louis, will equip an additional factory for the manufacture of piston rings.

The Baton Rouge Repair Works, Baton Rouge, La., has been organized by G. J. Granger and George C. Brian to operate a local foundry and machine repair plant.

The E. W. Dreckschmidt Fire Apparatus Co., St. Louis, has been incorporated for $50,000 capital stock, fully paid up, by Edward W. Dreckschmidt, David Beckett and Walter P. Jones.

The Acme Lock Stitch Sewing Machine Co, St. Louis, has been incorporated with $100,000 capital stock to manufacture a device for sewing machines. The incorporators are J. H. Keebaugh, A. C. Howard, W. M. Fritch, E. E. DeVries, J. H. Keebaugh, John Weilacher, E. H. Benoist and Sig. J. Lang.

Texas

AUSTIN, Aug. 2.

The Dallas Power & Light Co., Dallas, has increased its capital stock of $1,000,000 to $2,500,000. It plans extensions to its power transmission system.

The Union Oil Mills, Hillsboro, has been incorporated for the purpose of building a cottonseed oil mill to cost about $250,000. R. L. White is a stockholder.

The State Refining Association has purchased 20 acres near Grand Prairie, upon which it will build an oil refinery to cost about $100,000. Shearon Bonner, Dallas, is president.

The Federal Oil & Refining Co., Fort Worth, has purchased a site at Marshall, upon which it will build a 2000-bbl. oil refinery. B. D. Dodd, Marshall, is local representative.

The Peoples Ice Co., Wichita Falls, will build a new ice and cold storage plant to cost about $125,000.

California

LOS ANGELES, July 19.

The D. & B. Pump & Supply Co., Los Angeles, has filed plans for the erection of an addition to its plant at Humboldt Street and Avenue 26.

The Oscillator Machine Co., Los Angeles, has been incorporated with a capital stock of $75,000 by F. A. Whitney, E. C. Gates, C. A. Campbell and Will S. Preston, to manufacture special machinery.

The Moreland Truck Co., Los Angeles, manufacturer of motor trucks, has awarded a contract to the C. J. Kubach Co., Merchants' National Bank Building, for the construction of four new buildings at its works at Burbank, forming the remainder of the company's new plant. Three buildings will be for general metal working and manufacturing, averaging about 160 x 320 ft. each. The fourth will be a two-story office, 80 x 175 ft. The additions are estimated to cost about $500,000, including equipment. On completion, the company proposes to remove its Los Angeles works to the new site.

The Four Wheel Hydraulic Brake Corporation, Los Angeles, has been incorporated with a capital of $20,000 by E. A. Featherstone, Otto C. Gutsmithl and D. O. Scott, to manufacture mechanical equipment.

The Columbia Brass Foundry, 722 High Street, Los Angeles, has filed notice of organization to manufacture brass and other metal castings. P. N. Bailey, 3412 Thomas Street, and C. L. Draper, 2828 Orchard Avenue, head the company.

The Layne & Bowler Corporation, 900 Santa Fe Avenue, Los Angeles, has acquired about nine acres of land at Santa Fe Avenue and Fifty-fifth Street for a new plant to manufacture deep well pumping machinery.

The Harbor Sheet Metal Works, 286 Third Street, San Pedro, Los Angeles, has filed notice of organization to manufacture sheet metal specialties. M. B. Little, 333 Beacon Street, San Pedro, heads the company.

The Clark-Turner Piston Co., Los Angeles, has been incorporated with a capital stock of $50,000 by Edward C. Clark, Los Angeles; Stanley S. Turner and Frank C. Dunham, Pasadena, to manufacture pistons for automobile engines and kindred products.

The Pacific Electric Railway, Los Angeles, has filed plans for the erection of its proposed new electric power station at Los Angeles Harbor to cost about $12,000.

The Kern County Motor Co., Bakersfield Cal., is having plans prepared for the erection of a new one-story machine shop and automobile service building, 58 x 132 ft., at Chester Avenue and Twenty-second Street. It will also build similar works on Center Street, Taft.

The Pacific Northwest

SEATTLE, July 29.

During the past month trade throughout this district has been excellent. There has been a marked increase in imports and decrease in exports. Manufacturing is generally active, although under lower pressure than during the war period. Considerable expansion is noted in some lines, particularly in smaller plants. Shipbuilding shows practically no change, with no new contracts being let. Extreme interest is being taken in the outcome of negotiations for the restoration of canceled contracts or for freedom in taking foreign contracts. Seattle and Portland yards are working steadily, although some plants have reduced their forces. Enough contracts are on hand to keep the plants running the remainder of the year.

Gauntlett & Co., Seattle, plan the erection of a machine shop and repair plant on Westlake Avenue and Highland Drive.

W. B. Russell, South Vancouver, B. C., plans the construction of a machine and repair shop, 33 x 75 ft. on Kingsway, near Commercial Drive, that city.

The Great Falls Iron Works, Great Falls, Mont., plans the immedaite construction of a new foundry, 100 x 150 ft., to cost $50,000. Electrically operated traveling cranes and other equipment will be installed.

The Pacific Brass & Steel Foundry, Portland, is building a foundry to take care of increasing business.

The Rogers-Baker Machine Works, Seattle, with a capital stock of $5,000, has been organized by Henry Rogers, W. W. McKenzie and Hugh W. Baker, to construct a small machine shop.

The Pacific Radiator Shield Co., Inc., Seattle, has taken over the machinery and patents of the former Pacific Radiator Shield Co. and will begin the manufacture of radiator shields.

The Pacific Ice Machine & Supply Co., Seattle, A. H. Brant, president, has purchased the plant of the Hildebrand Metallic Packing Co. It will be moved to a new location and enlarged, and new equipment will be installed.

The Paragon Tool Co., Seattle, is erecting a new two-story building on the northwest corner of Pine Street and Boylstone Avenue.

F. J. Leonard, Portland, a packing house engineer, is negotiating for the erection of a plant at Albany, Ore., at a cost of $25,000 for the building and an equal amount for machinery.

The Bloedel-Donovan Lumber Mills Co., Bellingham, is building an addition to its plant at a cost of $150,000 for building and machinery. It will be completed within eight months.

The Pioneer Lumber Co., Toledo, Ore., has purchased the Elk City mill from the Bigelow-Doan Lumber Co., and expects to move its mill to Elk City and consolidate the two plants.

The South Willamette Planing Mill, Eugene, Ore., owned by the Booth-Kelly Lumber Co., was destroyed by fire with a loss of about $15,000.

Canada

TORONTO, Aug. 4.

Business in the machinery and machine-tool market is showing a general improvement, and now that the labor troubles are on the last lap in regard to settlement, dealers look for still greater improvements. Deliveries on new equipment are rather slow and although there is no improvement in sight dealers are of the opinion that as soon as shops are again on a working basis orders will be speedily filled. New orders booked are not for any particular line of equipment, but are well distributed, railroad equipment, automobile shops and other lines being well represented. The Canadian National Railways are again in the market. The total list calls for about 1500 small tools, mostly carbon drills, and about 50 high-speed drills. A number of inquiries are also coming from automobile concerns with plants under construction in Ontario. Wood-working and mining machinery is also in demand. Sales of second-hand equipment are still the leading feature of the market and dealers are now required to quote prices on second-hand tools as well as new, and in many cases shops requiring tools are taking those which have received only slight usage in preference to waiting for the delivery of new machines.

At a meeting of the shareholders of the Imperial Steel & Wire Co., Collingwood, Ont., a motion was carried to rebuild the works which were destroyed by fire about two months ago. The insurance on the property, after allowing for all liability, will yield about $375,000 toward the cost of the new plant.

James, Loudon & Hertzberg, Excelsior Life Building, Toronto, have been awarded the contract for the construction of a new waterworks plant for the city of Chatham, Ont., to cost between $150,000 and $250,000. None of the machinery in the old plant will be used, as it is the intention to install all new equipment.

D. H. McDougall, president Nova Scotia Steel & Coal Co., New Glasgow, N. S., has completed for his company the purchase from the British Ministry of Shipping, represented by Director J. B. Whyte of New York, the coal-handling plant on the Canadian National Railway terminals at Halifax, N. S.

The factory of the Marshall Ventilated Mattress Co., 8 Market Street, Toronto, was destroyed by fire July 28, with a loss to building and machinery of $17,000.

The Gregory Tire & Rubber Co., South Vancouver, B. C., has secured a site for the erection of a manufacturing plant.

The Beaver Co., Ltd., Aylmer Road, Beaverdale, Thorold, Ont., will build a factory at a cost of $250,000.

Plans have been prepared and bids will be called at an early date for the erection of a $75,000 factory for J. S. A. Whealy, 100 Dunvegan Road, Toronto.

The Toms Contracting Co., 501 Kent Building, Toronto, has been awarded the contract for the erection of an addition to the plant of the Willys-Overland Co., Toronto.

The Phoenix Construction Co., Ltd., Montreal, has been incorporated with a capital stock of $100,000 by Francois P. Brais, Laura M. Smith, Ella M. Jackson and others to manufacture iron and wood-working tools, machinery, etc.

The Canadian Peerless Jewelry Co., Ltd., Sherbrooke, Que., has been incorporated with a capital stock of $1,000,00. by John P. Wells, Charles D. White, Catherine L. Dearden and others to manufacture jewelry, silverware, clocks, watches, etc.

The Pressure Proof Rings, Ltd., Sherbrooke, Que., has been incorporated with a capital stock of $100,000 by Edward L. Mills, Silvester W. Jenkes, George D. MacKinnon and others to manufacture pistons, piston rings, engines, motors, etc.

The Canada Stoker Co., Ltd., Galt, Ont., has been incorporated with a capital stock of $40,000 by William E. Demill, Syril V. Demill, both of Galt, Ont.; William M. McRobert, Toronto, and others, to manufacture machinery, tools, mechanical appliances, etc.

According to an official of the F. W. D. Auto Co., work will be started immediately on the erection of a plant for the assembling of motor truck parts and for the manufacture of truck bodies at Kitchener, Ont.

Government Purchases

WASHINGTON, Aug. 4.

Bids will be received by the Bureau of Supplies and Accounts, Navy Department, Washington, for supplies for the naval service, as follows: Schedule 4280, 9 grinding machines for Mare Island, opening Aug. 26; schedule 4285, 1 toolmakers' lathe for Boston, opening Aug. 15.

Current Metal Prices

On Small Lots, from Merchants' Stocks, New York City

The quotations given below are for small lots, as sold from stores in New York City by merchants carrying stocks.

As there are many consumers whose requirements are not sufficiently heavy to warrant their placing orders with manufacturers for shipment in carload lots from mills, these prices are given for their convenience.

On a number of articles the base price only is given, it being impossible to name every size.

The wholesale prices at which large lots are sold by manufacturers for direct shipment from mills are given in the market reports appearing in a preceding part of THE IRON AGE under the general headings of "Iron and Steel Markets" and "Metal Markets."

Iron and Soft Steel Bars and Shapes

	Per lb.
Bars:	
Refined iron, base price	3.37c. to 3.62c.
Burden's H. B. & S. bar iron, base price	6.10c
Burden's best bar iron, base price	6.30c
Swedish bars, base price	20.00c
Soft Steel:	
¾ to 1⅞ in., round and square	3.37c. to 3.62c.
1 to 6 in. x ⅜ to 1 in.	3.37c. to 3.62c.
1 to 6 in. x ¼ to 5/16	3.47c. to 3.72c.
Rods—⅝ and 11/16	3.42c. to 3.67c.
Bands—1½ to 6 x 3/16 to No. 8	4.07c. to 4.57c.
Shapes:	
Beams and channels—3 to 15 in.	3.47c. to 3.72c.
Angles:	
3 in. x ¼ in. and larger	3.47c. to 3.72c.
3 in. x 3/16 in. and ⅛ in.	3.72c. to 3.97c.
1½ to 2½ in. x ⅛ in.	3.52c. to 3.77c.
1½ x 2¾ in. x 3/16 in. and thicker	3.47c. to 3.82c.
1 to 1¼ in. x 3/16 in.	3.52c. to 3.77c.
1 to 1¼ in. x ⅛ in.	3.57c. to 3.82c.
⅞ x ⅞ x ⅛ in.	3.62c. to 3.87c.
¾ x ⅛ in.	3.67c. to 3.92c.
⅝ x ⅛ in.	4.07c. to 4.32c.
½ x 3/32 in.	5.17c. to 5.42c.
Tees:	
1 x ⅛ in.	3.87c. to 4.12c.
1¼ in. x 1¼ x 3/16 in.	3.77c. to 4.02c.
1½ to 2½ x ¼ in.	3.57c. to 3.82c.
1½ to 2½ x 3/16 in.	3.57c. to 3.82c.
3 in. and larger	3.52c. to 3.77c.

Merchant Steel

	Per lb.
Tire, 1½ x ½ in. and larger	3.37c. to 3.62c.
Toe calk, ½ x ⅜ in. and larger	4.25c
Open-hearth spring steel	6.00c
Standard cast steel, base price	14.00c
Extra cast steel	18.00 to 20.00c
Special cast steel	23.00 to 25.00c

Tank Plates—Steel

	Per lb.
¼ in. and heavier	3.67c. to 3.92c.

Sheets

Blue Annealed

	Per lb.
No. 8 and 3/16 in.	4.52c
No. 10	4.57c
No. 12	4.62c
No. 14	4.67c
No. 16	4.77c

Box Annealed—Black

	Soft Steel C. R., One Pass, per lb.	Wood's Refined, per lb.
Nos. 18 to 20	5.30c	——
Nos. 22 and 24	5.35c	6.55c
No. 26	5.40c	6.60c
No. 28	5.50c	6.75c
No. 30	6.00c	——

No. 28, 36 in. wide, 10c higher.
Wood's Keystone Hammered, 18-24 gage, 9¾c; 26-28 gage, 10¼c.

Galvanized

	Per lb.
No. 14	5.85c to 6.10c
No. 16	6.00c to 6.25c
Nos. 18 and 20	6.15c to 6.40c
Nos. 22 and 24	6.30c to 6.55c
No. 26	6.45c to 6.70c
No. 27	6.70c to 6.95c
No. 28	6.75c to 7.00c
No. 30	7.25c to 7.50c

No. 28, 36 in. wide, 20c. higher.

Corrugated Roofing, Galvanized

2¼ in. corrugations, 10c. per 100 lb. over flat sheets.

Steel Wire

Base Price* on No. 9 Gage and Coarser	Per lb.
Bright basic	5.25c
Annealed soft	5.25c
Galvanized annealed	6.00c
Coppered basic	6.00c
Tinned soft bessemer	7.25c

*Regular extras for lighter gages.

Brass Sheet, Rod, Tube and Wire

Base Price	
High Brass Sheet	32c
High Brass Wire	32c
Brass Rod	31c
Brass Tube	46½c

Copper Sheets

Sheet copper, hot rolled, 16 oz., 32½c. to 35c. per lb. base.

Cold rolled, 14 oz. and heavier, 1c. per lb. advance over hot rolled.

Tin Plates

Bright Tin		Coke—14x20	
			Primes / Wasters
Grade "AAA" Charcoal 14x20	Grade "A" Charcoal 14x20	80 lb.	$7.80 / $7.55
		90 lb.	7.90 / 7.65
		100 lb.	8.00 / 7.75
IC $11.30	$10.05	IC	8.15 / 7.90
IX 13.50	12.00	IX	9.15 / 8.90
IXX 15.25	13.75	IXX	10.15 / 9.90
IXXX 17.00	15.50	IXXX	11.15 / 10.90
IXXXX 18.75	17.25	IXXXX	12.15 / 11.90

Terne Plates

8-Lb. Coating 14x20

100 lb.	$8.50
IC	8.65
IX	9.65
Fire door stock	11.75

Tin

Straits pig	74c to 75c
Bar	80c to 85c
American pig, 99 per cent	70c to 72c

Copper

Lake Ingot	26c
Electrolytic	24c to 25c
Casting	24c to 25c

Spelter and Sheet Zinc

Western spelter	9c to 10c
Sheet zinc, No. 9 base, casks	12c; open 13c

Lead and Solder*

American pig lead	6½c to 7c
Bar lead	7½c to 8½c
Solder ½ & ½ guaranteed	45c
No. 1 solder	40c
Refined solder	34c

*Prices of solder indicated by private brand vary according to composition.

Babbitt Metal

Best grade, per lb.	90c
Commercial grade, per lb.	50c

Antimony

Asiatic	10c

Aluminum

No. 1 aluminum (guaranteed over 99 per cent pure), in ingots for remelting, per lb. 35c to 37c

Old Metals

The market is quiet and prices are unchanged. Dealers' buying prices are nominally as follows:

	Cents Per lb.
Copper, heavy and crucible	19.00
Copper, heavy and wire	18.00
Copper, light and bottoms	15.50
Brass, heavy	12.50
Brass, light	8.50
Heavy machine composition	18.00
No. 1 yellow rod brass turnings	10.00
No. 1 red brass or composition turnings	14.00
Lead, heavy	5.00
Lead, tea	3.75
Zinc	4.50